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THE INTERNATIONAL CONGRESS AT BERLIN JUNE 1-5

The official programmes for the great world meeting on Housing and Town Planning that is to be held in Berlin from June first to June fifth have recently been received in this country. They indicate that the occasion is one likely to be of outstanding value to persons interested in these two great movements. In our last issue we indicated in a general way the nature of the meetings that are to be held at this time. As the time approaches we feel sure that our readers will be interested in the details of this world gathering of housing reformers and town planners.

From June 1st to 5th every morning there will be a meeting held in the Festsaalgebäude adjoining the Zoological Gardens situated in the West End of Berlin where there are good hotels.

In the afternoon visits will be made to different parts of Berlin and its environs to study in the field various housing and town planning developments in that community. These exhibits will all be under local guidance and leadership so that the delegates will be enabled to obtain an authoritative and first hand impression of the most recent developments in housing and town planning in that city. The approximate cost of these trips is estimated at 4 marks per person for each afternoon. During the Conference a visit will be made to Potsdam by car and boat, which will give the delegates an opportunity of seeing the town and the various museums, palaces &c., as well as the facilities for open air recreation that have been developed in the Berlin district. The cost of this trip is estimated at 13 marks.

POST CONFERENCE TOURS

Following the Conference, a 5-day tour has been organized by the International Housing and Town Planning Federation. These include on the first day, June 6, an all-day visit to the Spreewald by car and

boat. The Spreewald is an interesting area of lakes, waterways, and woodland, 28 km. long by 7 to 11 km. wide and contains a number of old-world villages. Owing to their isolated position, the inhabitants, known as Wends, have retained their language, customs and local costumes to this day. The water-ways are the traffic ways of the district and special boats will be reserved for delegates. Approximate cost of this trip will be 21 marks.

On June 7th, a visit is to be made to Dresden and the Saxon Switzerland. This visit will give an opportunity of seeing housing schemes in Dresden, visiting the International Exhibition of Hygiene, with a motor drive to the Saxon Switzerland, returning to Berlin the same night. The approximate cost of this trip will be 9½ marks in addition to the railway fare. On the day following, a visit will be made to the great city of Hamburg. The railroad fare is 25 marks, subject to a 25% reduction, and with no further expenses.

From Hamburg the tour will take the members of the Conference to Essen and the great industrial Ruhr Region. They will arrive at Essen in the afternoon of June 9, when they will listen to an address in the new headquarters of the Ruhr Regional Planning Federation. In the evening there will be a social gathering, and on the next day, June 10th, there will be visits to housing schemes, a short lecture on the development of Essen, and a tour of the Rhenish-Westphalian Industrial area, with a luncheon as guests of the City and the Ruhr Regional Planning Federation. The approximate cost, in addition to the railroad fare, will be 7 marks. This will end the tour and from here the delegates will depart on their respective journeys.

THE CONGRESS PAPERS

Following the usual custom, no Papers will be read at the Congress, but will be printed in advance and sent in book form to the delegates so that they may read them before going to Berlin. The meetings at the Congress will be taken up with discussions of these Papers by leaders in their respective fields. After the Congress a final Report will be sent to members. Delegates will pay a Congress fee of £1, and ladies accompanying delegates 10s. All delegates will be entitled to participate in the official receptions and will be able to enter the German Building Exhibition at reduced prices.

In view of the fact that delegates will receive free passport visas from the German consuls in their respective countries upon production of their delegate's card, it will be advantageous for all persons who are contemplating attending this important meeting to send in their

adhesion blank at an early date to the Organizing Secretary, H. Chapman, 25 Bedford Row, W. C. 1, London, England.

SUBJECTS OF THE CONFERENCE

The Conference, which is both a Housing and Town Planning meeting is to discuss just two subjects. The housing subject is "The Abolition of Slums"; the Town Planning subject is "The Traffic Problem in Relation to Town and Regional Planning."

THE ABOLITION OF SLUMS

It is not proposed to deal with this subject merely from the point of view of removing people from bad houses and placing them in good ones. The slum problem has many aspects and can only be finally solved by a comprehensive policy. Groups of unhealthy houses or single unhealthy houses have to be demolished or made healthy. Areas that have been cleared of houses must be replanned. The evicted persons must be rehoused. Sanitary and housing laws must be put into force and town planning measures adopted so that the site may be used to the best advantage and recurrence of the evil avoided.

The study of the problem involves consideration of the methods already adopted or to be adopted in dealing with existing slums. For example, what is the procedure for declaring a house unfit for habitation and for ensuring its rehabilitation or demolition? What is the procedure for dealing with the three main types of slums, e.g. (a) areas where all the houses are beyond repair, (b) areas where some of the houses are beyond repair and some are in reasonable repair or could be put in condition, and (c) individual unhealthy houses in an otherwise good area? Is compensation to be paid in respect of the buildings demolished (a) where the property is itself unhealthy, or (b) where the property is sound but stands amidst slum property and must be demolished to secure a complete scheme of reconstruction? If a local authority does the demolition can it expropriate the land and if so under what conditions as regards valuation, e.g., is it valued as land for housing or at the highest commercial value? What building or town planning restrictions may be imposed on the cleared area? To minimise compensation payable, is it reasonable to estimate the life of a property which itself is in good condition but is situated in a slum area? How far does rent restriction hinder the improvement of existing house property? What scope is there for private enterprise with reference to the abolition of slums? Small ownerships may hinder a comprehensive scheme of improvement; is it better to consoli-

date ownership by purchase by the municipality or is pooling and re-distribution of ownership practicable in the case of built-upon land?

The replanning of the area, not only in relation to the immediate neighborhood but also in relation to the general town plan is also a question of the greatest importance. Then there is the problem of rehousing the evicted. Should they be rehoused on the same site or in another part of the town? And how far is it possible to synchronise demolition and rehousing? In what circumstances are cottages preferable and possible for rehousing?

The prevention of slums raises the question of the origin of slums. Is it the same in all kinds of towns, old and new, large and small? How far can prevention be effected by dealing with the question in its early stages, particularly in small towns and villages. What town planning and zoning measures are necessary for the prevention of slums? Would the zoning of residential areas, (a) to prevent their being used for commerce, (b) to secure that a reasonable proportion of each site is kept permanently free from buildings, help to ensure that houses are kept in habitable condition?

Among the housing leaders who are to discuss this question, the following are already announced in the Provisional Programme.

Dr. Jürgen Brandt, C.E., Oberbaurat, Hamburg.
K. Bjerregaard, Director, Housing Department, City of Copenhagen.
Harald Hals, Director of Town Planning, Oslo.
J. F. van Hoytema, C.E., Dutch East Indies.
Frank Hunt, C.V.O., Chief Valuer to the London County Council.
Arie Keppler, C.E., Housing Director of Amsterdam.
Dr. Herman Maetz, C.E., Chief Town Planning Inspector, Vienna.
Dr. L. P. Procházka, Chief Medical Officer of Prague and Jar. Vaneček, Consulting Engineer to the City of Prague.
Georges Risler, Member of the Institute of France, President of the Sociological Institute, Paris.
Professor C. Sfintescu, Chief Engineer and Director of Technical Services, Bucarest.
Dr. Virgilio Testa, General Secretary of the National Institute of Town Planning, Rome.
Lawrence Veiller, Secretary of the National Housing Association, New York.
Dr. Edmund von Wildner, formerly City Councillor of Budapest.
Rudolf Zelenka, Consulting Engineer, Prague.

THE TRAFFIC PROBLEM IN RELATION TO TOWN AND REGIONAL PLANNING

Traffic in relation to planning has two main divisions, (1) The planning of a town or region to prevent needless traffic, (2) The provision of the best facilities for necessary traffic. The latter has three aspects: national, regional and local.

Modern inventions have revolutionised methods of transport but instead of alleviating congestion have added to it. Many of our towns were built before these modern inventions were known, and have therefore to be replanned for new conditions without losing their original

character. Town extensions and new towns have also to be planned in accordance with these traffic conditions. This raises the question of which type of town development is most suitable for the present day, to meet the requirements of industry, commerce and social welfare. There is the method of (a) the highly centralized great towns such as London, Paris, Berlin, New York, or (b) the idea of the central town with development radiating from it, the "rays" of development being separated by open spaces, or (c) the idea of development by satellites, each satellite being a self-contained unit separated physically from the central town. A system of traffic and transport routes that is suitable for one type of development would not be suitable for another type.

There are four main kinds of traffic, viz. (1) Main line railways, (2) Suburban railways and tramways, (3) Omnibuses, motor vehicles and general road traffic, (4) Air transport. Consideration has to be given to the functions of each of the different methods of transport, their suitability for particular circumstances and the extent to which they can be co-ordinated. For example, how far can main line railways be economically utilised for outer-suburban services? Should suburban railways, 'buses, and trams follow approximately the same routes as main line railways? Should trams and omnibuses be utilised for long distance journeys, or should they act as feeders?

To what extent can air routes be defined, what are the requirements as to aerodromes and landing fields, their number, surroundings and access to them?

Water transport has not been included among the four main types of transport because it is usually a localized rather than a general problem but wherever it exists its connection with transport on land needs most careful consideration.

One detail in connection with roads is the extent to which main trunk roads should be kept solely for the use of long-distance motor traffic, building being forbidden on their frontages.

The object of the papers and discussion is to endeavor to arrive at a conspectus of the whole problem of traffic and transport in relation to town and regional development; to make clear what are the present conditions at certain important centres; how these present conditions have changed during the last thirty years; what increase of each kind of traffic is to be expected in the future; what will bring traffic into relation with the effective, healthy and pleasant functioning of human life.

This aspect of Town Planning is to be discussed by the following leaders in this field in their respective countries.

Dr. Leonhard Adler, C.E., Stattdaurat, Berlin.
 Cesare Albertini, C.E., Former Director of the Town Planning Department,
 Milan.
 Berndt Aminoff, Architect, Town Planning Office, Helsinki.
 P. Bakker Schut, C.E., Director of the Municipal Town Planning and Housing
 Department of the Hague.
 Ivo Beneš, C.E., Brno.
 Eugenio Fuselli, C.E., Architect, Rome.
 August von Kempelen, Oberbaurat, Budapest.
 Felix Labussière, Assistant Director of General Services of the Public Trans-
 port Company of Paris.
 A. Lamse, C.E., Architect, Chief of the Town Planning Department, Riga.
 Harold Lewis, Executive Engineer of the Regional Plan of New York and its
 Environs and Daniel L. Turner, Consulting Engineer to the New York State Transit
 Commission.
 Gustav Linden, Architect, Royal Building Board, Stockholm.
 V. Malling, Secretary of the Danish Town Planning Laboratory, Copenhagen.
 George McAneny, President of the Regional Plan Association, New York,
 Former Chairman of the New York State Transit Commission.
 Eustach Mölzer, C.E., President of the State Commission for Planning the
 Prague Region.
 Dr. Franz Musil, C.E., Town Planning Director of Vienna.
 G. L. Pepler, F.S.I., Past President of the Town Planning Institute, London.
 Frank Pick, Managing Director of the Underground Railway, Tramway and
 Omnibus Companies, London.
 Dr. Karl Remy, Reichsbahnoberrat, Berlin.
 Stanislaw Rozański, C.E., Warsaw.
 Professor C. Sfintescu, Chief Engineer and Director of Technical Services,
 Bucarest.
 Ugo Vallecchi, C.E., Railway Inspection Department, Ministry of Transport,
 Rome.

In addition to these two main topics, there will be a special report presented on The Lessons of Recent Congresses by Dr. R. Heiligenthal, Oberbaurat, Professor at the Technical High School at Karlsruhe and a veteran leader in the town planning movement.

During the Congress the annual meeting of the International Federation for Housing and Town Planning, of which Raymond Unwin is President and H. Chapman, Organizing Secretary, will be held, as well as the meeting of the Council and the Executive Committee of that body. An official reception will be given by the Reich Government, the Prussian Government and the City of Berlin during the Congress period.

In addition to these meetings of the International Housing and Town Planning Federation and coincident with them, will be the Annual Meeting of the International Housing Association, of which Senator F. M. Wibaut of Holland is President and Dr. H. Kampffmeyer is General Secretary with headquarters at Frankfurt am Main.

The topics of this Congress were announced in our last issue. The meetings will be held on the same dates, from June 1st to June 5th, with tours of inspection during three afternoons to see housing conditions in Germany. Following the Conference, there will be a study tour from June 5th to June 11th, visiting Breslau, Prague, Dresden,

Leipzig and the industrial districts of Central Germany situated between Leipzig, Merseburg and Halle. Subscription to this Congress is \$5, and half that rate for ladies accompanying delegates. Those wishing to participate in it will find it advantageous to send their adhesion at the present time to Dr. H. Kampffmeyer, General Secretary, International Housing Association, 27 Hansa-Allee, Frankfurt am Main, Germany.

Copies of the preliminary programme of both these congresses can be obtained upon application to the National Housing Association, 105 East 22nd Street, New York City.

A SPECIAL STUDY TOUR

For those who may wish to attend these Congresses in a party and secure the benefits that accrue from thus traveling, both in reduced rates and in the advantage of special guidance, an unusual opportunity is afforded in the special study tour that has been organized by the World Acquaintance Travel, Inc., 20 West 43rd Street, New York City.

Under the leadership and direction of Dr. Edith Elmer Wood, well-known housing expert, such a trip has been organized. Dr. Wood's party will sail from New York by the Cunard Line on May 8th and expects to make visits before the Congress to study housing and town planning conditions at first hand in England and Holland, with visits after the Congress in France—the delegates reaching home before July 1st, for those who want to return by that date. It is stated that all inclusive rates, cabin class, will amount to about \$800, and about \$700 where tourist-third class on steamer is used. Further information with regard to this tour will be furnished by Dr. Wood, at 53 Washington Square South, New York City.

A GREAT BUILDING AND HOUSING EXHIBITION

From early May until sometime in August, there will be a vast Building Exhibition in the well-known Berlin Exhibition grounds which occupy an area of about 50 acres. The total floor space of the various halls in which this Exhibition will be held is 55,000 square metres.

Most of this Exhibition will be a commercial one, showing all of the most recent developments in building in Germany. One part of it will be an International Housing and Town Planning Exhibition.

The Exhibition will be divided into the following 5 main parts:

Modern Construction Work (Bridges, Roads, Large Buildings, etc.).
The Modern House.
Modern Building (Building Materials and Methods, Carrying out Building Work, Mechanical Appliances, etc.).
Building and Construction for Agricultural Needs.
International Housing and Town Planning Exhibition.

THE HOUSING AND TOWN PLANNING EXHIBITION

The International Town Planning and Housing Exhibition will be in three sections. Two will consist of German housing and town planning exhibits, the third will be an International Section consisting of housing and town planning exhibits from countries outside of Germany.

As far as possible the German exhibits will illustrate progress from 1900 to 1930, and it is during these last three decades that there has been such a welcome revolution in housing and town planning. It is proposed to regard 1900 as "Yesterday", belonging to history, and 1930 as "To-day". By contrasting "Yesterday" with "To-day" it is hoped to evoke a vision of "Tomorrow".

In the two German sections it is intended to show not merely a collection of plans and models of schemes already carried out but also to illustrate present-day housing and town planning problems and how they are being dealt with. The Exhibition will be built up on the basis of a systematic treatment of the different subjects, each of which will be in the hands of the expert whose name appears in the programme. The greater part of the Exhibition will be devoted to what is being done at present and giving an indication of what should be done in the future.

As public welfare must necessarily be the guiding principle in dealing with housing and town planning and as the basis of urban development schemes is economic, all of the various aspects of these questions dealt with in the Exhibition may be grouped under the heading "Town and Regional Development, Urban Economy and Public Welfare".

No definite programme will be issued for the International Section but it is expected that the countries participating will contribute exhibits illustrating some of the characteristic features of their own housing and town planning schemes, and that they will give emphasis to the more difficult problems that confront them and will deal with the subjects indicated in the German programme.

One entire large building will be given up to the International Housing and Town Planning Exhibition, and will contain exhibits from most of the leading countries of the world. The United States is send-

ing a very representative exhibit, both in the Town Planning and the Housing fields.

THE U. S. A. HOUSING EXHIBIT

The Housing exhibit, which has been prepared under the direction and guidance of Lawrence Veiller, on behalf of the National Housing Association at the request of the Berlin authorities and the officers of the International Housing and Town Planning Federation, seeks to give a composite picture of the situation in America, so far as it can be done in summary fashion and in the limited space that is available for the exhibit.

One of the most interesting exhibits shows a great housing enterprise of block dwellings in New York City organized and managed by a great trade union in the clothing trades, viz., The Amalgamated Clothing Workers of America. This is a true co-operative enterprise, co-operatively owned, co-operatively managed. Every tenant is a shareholder in the company. This development is one of the best of its kind in the United States and is occupied by real working people.

Another exhibit is of the "Kitchen Practical". Here will be found displayed the latest and most recent ideas for the development of kitchens in American homes—the result of scientific study by efficiency engineers and experts in motion study; organized so as to avoid "lost motions" and save the housewife unnecessary steps. These studies are likely to revolutionize the methods of organizing kitchens in the United States. The exhibit has with great public spirit been contributed by the Brooklyn Borough Gas Company in New York City through its President, Miss Mary Elisabeth Dillon, who has developed this model kitchen to aid their customers in cooking by gas.

One very attractive exhibit shows how the man of moderate means, the salaried man in the class of junior executives, lives in America. This exhibit is contributed by the Roland Park Company of Baltimore, one of the oldest cities in the eastern part of the U. S. A. This company which has been sub-dividing and developing real estate for over 40 years has 4 developments on the outskirts of Baltimore—Roland Park, Homeland, Guilford and Northwood. These developments represent some of the best work of the kind in the United States, utilizing the advantages of natural scenery and preserving and fostering it in these garden communities.

Although a smaller development, but equally attractive from the point of view of beauty and residential charm, is the exhibit contributed by Dr. George Woodward, a public-spirited citizen of Philadelphia, who has developed an ideal residential settlement for people of moderate

means in one of the suburbs of Philadelphia at Chestnut Hill, known as "French Village", because of the characteristic French style of architecture.

An exhibit of an industrial town in the South at Kingsport, Tennessee, is contributed by the architect of many of its buildings, Clinton Mackenzie, of New York City. While this industrial town cannot with strict accuracy be classified as a Garden City, it has many of the aspects of such a development as known in England, and as will be seen from the photographs and site plans, it is a most delightful place in which to live and work. It is a town of 15,000 people all of whom are employed in the industries of the town. The site in this case was laid out by the well-known American town planner, John Nolen.

One of the further exhibits is a series of charts and diagrams showing the extent and development of the Building & Loan Association movement in America.

And finally, a most instructive and characteristic exhibit of the United States is that presented by the Philadelphia Housing Association. This is a private organization of public-spirited citizens who contribute their funds in an organized movement to improve better housing conditions in the great city of Philadelphia, a city of about 2,000,000 population. Some of the varied aspects of the work of a live militant organization of this kind are graphically displayed.

THE U. S. A. CITY PLANNING EXHIBIT

The City Planning Exhibition from the United States has been prepared under the direction of Flavel Shurtleff and similarly seeks to give as representative a picture as possible of the more recent developments in city planning and regional planning in America, so far as that is possible in the limited space that has been made available.

From the considerable and varied planning material it has been necessary to make a rather limited and arbitrary selection which, however, fairly illustrates several types of planning in the United States. The following are the leading Exhibits:

STATE PLANNING

An interesting preliminary State Plan has been made for Illinois. The Highway Planning under the direction of the State Highway Commission of New Jersey shows successful solutions of traffic problems of unusual difficulty. In the 60-mile strip lying between the great cities of New York and Philadelphia, the State Highways must accommodate inter- and intra-regional traffic of very heavy volume.

REGIONAL PLANNING

Three of the most populous Metropolitan Regions—two in the east, New York and Philadelphia, and one on the Pacific Coast, Los Angeles—have been working on planning programmes since 1922. The Plans of New York and Philadelphia are unofficial. In Philadelphia they are being made under the auspices of a citizens' organization which has raised \$600,000 for the purpose. In New York they have been completed under the direction of a committee appointed by the Russell Sage Foundation which has appropriated \$1,200,000. Los Angeles has an official county planning commission which is supported entirely by public funds.

Planning for the national capital and its environs is represented by the work of the National Capital Park and Planning Commission appointed by the President under an act of Congress.

CITY RE-PLANNING

The Comprehensive Thoroughfare Plans for Boston, the oldest metropolitan city in the country.

Selections from planning work in several smaller cities, among them—

Roanoke, Va., a progressive southern city, an industrial and railroad center of 70,000 population.

Little Rock, Ark., a mid-western river city of 80,000 population.

Dubuque, Iowa, a prairie city on the Mississippi River of 60,000.

Reading, Pa., an industrial city of 110,000 near the coal mining region of Pennsylvania and the great markets of the Atlantic Coast.

PARK SYSTEMS

The parks and parkways of Westchester County, New York, and of Union County, New Jersey, are notable achievements.

NEW TOWNS

Radburn in New Jersey is being built by the City Housing Corporation of New York City, a limited-dividend company. It is a town planned to meet the needs of the motor age and to house eventually a population of 25,000.

At Boulder City the federal government will build a model town to house the workers on the great Hoover Dam which is being built across the Colorado River to produce a storage reservoir of thirty million acre-feet of water. The town site is on pure sand, high in the desert of the state of Nevada.

THE GERMAN TOWN PLANNING EXHIBITION

The whole town planning and housing exhibition has been developed under the direction of Herr Koeppen, Oberbaurat at Berlin, under the Chairmanship of a Committee headed by Robert Schmidt, of Essen, one of the world's leading town planners.

Naturally a very large part of the exhibition space in this exhibit is given up to an exhibit of German town planning. This with charac-

teristic German thoroughness and interest in details has been developed upon the following interesting and logical lines.

A. URBAN DEVELOPMENT AND URBAN ECONOMY

The Economic Basis of Town Planning.

Factors that lead to the growth of towns and to a need for replanning.

Mining, Industry, Commerce.

Changes in economic conditions.

Re-arrangement of municipal boundaries.

Prof. Dr. Ing. *Heilighenthal*, Karlsruhe.

B. The COMPONENT ELEMENTS OF URBAN DEVELOPMENT

1. *Residential Areas.*

Residential areas considered from the point of view of providing for the housing need of all classes of the community by the most appropriate and most economical methods.

Stadtbaurat *Ritter*, Leipzig.

2. *Business Areas.*

Business areas considered from the point of view of business efficiency.

Magistrat Oberbaurat *Koeppen*, Berlin.

3. *Industrial Areas.*

Industrial areas as the basis of modern industrial development.

Beigeordneter Oberregierungsrat *Dr. Rappaport*, Essen.

4. *Open Spaces.*

Open spaces considered from the point of view of the generally accepted needs of the population for recreation. The economic aspects of the question. The legal basis for a policy for the provision and arrangement of open spaces.

Senator u. Stadtbaurat Prof. *Elkart*, Hannover.

5. *The problem of Public Utilities and Public Services in Towns.*

Providing public utilities and public services; their influence on the economic organisation of the town.

Magistrats-Oberbaurat *Löschmann*, Berlin.

6. *The Traffic Problem.*

Urban traffic problems considered from the point of view of the effective use of the various means of transportation. The future importance of the means used for urban and inter-urban transportation of goods and passengers with special reference to automobile traffic.

Stadttrat *Reuter*, Berlin.

7. *The Town.*

The town as an organism with all its elements properly co-ordinated. The growth of towns. Town planning and regional planning and how they affect one another.

Stadtbaurat *May*, Frankfurt a. Main.

8. *Town Improvement Schemes.*

Carrying out schemes for improvement of street traffic conditions and for dealing with slums.

Magistrats-Oberbaurat *Koeppen*, Berlin.

9. *Developing Land for Building. Payments by Frontagers.*

Road making and laying of pipes etc., ready for new building. Charges payable by frontagers.

Prof. *Ehlgötz*, Berlin and Regierungsbaumeister *Lehwess*, Berlin.

C. ESTIMATING THE COST OF TOWN PLANNING PROPOSALS

Stadtbourat *May*, Frankfurt a. Main.

D. THE PROBLEM OF REGIONAL PLANNING

Regional planning as a means of providing for and regulating a national scheme of development.

Verbandsdirektor *Dr. Schmidt*, Essen and Landesoberbaurat *Dr. Prager*, Düsseldorf.

E. ASPECTS OF THE ART OF TOWN PLANNING

The influence of new economic and social ideas on the art of town planning. The ideal city of the past and future. Use of space in streets and squares. Colour in the town picture.

Hugo Häring, Architect, Berlin.

F. METHODS OF ADMINISTRATION IN TOWNS, WITH SPECIAL REFERENCE TO TOWN PLANNING AND ZONING

Stadtbourat *Dr. Ing. Wagner*, Berlin.

G. LAND POLICY AND THE COST OF LAND

Stadtrat *Dr. Fuchs*, Breslau.

H. TOWN PLANNING LEGISLATION

Stadtbourat *Dr. Ing. Wagner*, Berlin

THE GERMAN HOUSING EXHIBITION

In similar fashion the German Housing Exhibition has been prepared on the basis of a well thought-out plan, and seeks to display developments in the housing field in Germany from the 10 following different aspects:

1. PLANNING THE MODERN HOUSE

Professor *Gropius*, Berlin.

2. TYPES OF DWELLINGS AND ARRANGEMENT OF BUILDING BLOCKS

Stadtbourat, a. D. *Bruno Taut*, Berlin.

3. ACCESSORIES AND AMENITIES FOR USE IN COMMON IN HOUSING SCHEMES

Professor *Gustav Wolf*, Breslau.

4. GARDENS AND PLAYING SPACE IN THE INTERIOR OF BUILDING BLOCKS
Gartenarchitekt *Leberecht Migge*, Bremen.
 5. BUILDING COSTS AND RENTS
Baurat *Lübbert*, Berlin.
 6. BUILDING REGULATIONS AND ADVICE ON BUILDING
Baudirektor *Platz*, Mannheim.
 7. FINANCING HOUSING
Verwaltungsrechtsrat *von Gruner*, Berlin.
 8. THE EVOLUTION OF HOUSE BUILDING ENTERPRISE (PRIVATE, STATE,
MUNICIPAL, SOCIETIES ETC.)
Bürgermeister a. D. *Schwan*, Berlin.
 9. HOUSEWIFERY
Frau *Dr. Lüders*, M. d. R., Berlin.
 10. SOCIAL POLICY IN HOUSING
Stadtbaudirektor *Dr. Ing. Gut*, München.
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From all of this it is evident that a very unusual opportunity awaits students of housing and town planning in the United States in this Exhibition and International Housing and Town Planning Conference.

Every student of housing, every city planning and zoning official in the United States should avail himself of this opportunity; for it is not one that is likely to be repeated in the near future. The Exhibition alone—with the great developments that have come in the building industry in Germany in recent years—will be well worth the trip.

AIR AS YOU LIKE IT

“MANUFACTURED WEATHER”

The discoveries made a few years ago in, what—for want of a better term—we call the science of ventilation are now beginning to be applied to our homes. It is time that they were. They have been too long delayed.

Every school child now should know—we fear that a good many of them do not—that the old theories of ventilation, with its emphasis upon keeping down the amount of carbon-dioxide in the atmosphere and increasing the amount of oxygen, are no longer accepted, but that, instead, the three fundamental things necessary to achieve in buildings what we call good ventilation, or the right condition of the air, are, reduction of excessive temperature, having an air that is neither too moist nor too dry, and, finally, air that is in motion.

The temperature that now finds general acceptance for satisfactory conditions in our homes is 64° F. with a humidity standard of 80%—what that means we shall attempt to explain later. While it would seem that there should be no difficulty in keeping the temperature of our homes to a constant of 70 degrees, the home in America that is not overheated is the exception rather than the rule. This is not due, however, to the difficulty of controlling the amount of heat, but to the fact that the average American needs to be educated as to what are proper standards of heat. Most people like a hot room in the winter time. One reason for this is because the dryer the room is, the greater the heat necessary in order to keep people reasonably comfortable.

Starting in connection with industries that found it essential to success in producing their products that the air should be properly tempered, air conditioning has developed into a science. Beginning in textile mills, cigar manufacturing plants, candy factories, and other industrial buildings in which regulated air conditions are vital, it has been rapidly taken up by the great motion picture houses who found that if they were to hold their audiences in the hot summer months, their theaters must be attractive and above all things comfortable.

Starting in these places where expense was not of so vital a consideration, air-conditioning is now made possible for the average home. In fact, the art has so developed and progressed that a few years from now it will seem as great a defect in home construction to omit proper means of humidifying the atmosphere as it would to-day to fail to make provision for heating it.

A DRY ATMOSPHERE HARMFUL

A flood of light has been thrown upon the relative importance of dry weather and damp weather by the results of a series of studies of 60,000,000 deaths occurring in all parts of the world during a period of 15 years, carried on by Dr. Ellsworth Huntington, Climatologist of Yale University. As a result of these studies he reached three conclusions which may be stated as follows:

1. Fairly moist weather is almost invariably more healthful than dry weather of the same temperature, and, by inference, moist climates are correspondingly better than dry.
2. Cold waves—unless of extraordinary severity—are distinctly beneficial to health, while a rise of temperature even in winter is harmful. In considering this conclusion a careful distinction must be made between the effects of a drop in temperature—the cold wave itself—and of a continuance of a low temperature.
3. A variable climate is in general much more healthful than a uniform climate, even though the latter has an almost ideal temperature.

Dr. Huntington found that air moisture is almost as important to our health as air temperature. He considers the ideal weather condition is an average temperature of 64° F. and a mean relative humidity of 80%. That is, the daytime humidity may fall as low as 60%, if at night the air becomes so damp that dew falls. He points out that this degree of humidity is decidedly greater than that which is generally supposed to be most favorable; but adds that there can scarcely be much doubt as to the facts; and says that this seems so contrary to the usual belief that people are loath to accept it. He adds that the explanation probably lies in the fact that when the air is dry people spend more time out-of-doors than when it is wet. The out-of-doors life does much to improve health, which is wrongly attributed to the dryness.

Dr. Huntington says that wherever houses are heated the evil effects of dryness are only too apparent, and adds that the obvious conclusion would seem to be that in our hospitals and sickrooms we are killing thousands of people each winter because we keep the air as dry as that of deserts; and at the same time we are filling our hospitals by keeping our houses too dry. He goes on to say:

Out-of-doors the winter air is moist enough, but when heated it becomes so dry that it has a devastating effect upon the delicate mucous membranes. The average humidity ought to be as high as 80%. This is true not only of hospitals, but of the rooms where people in good health work, play and sleep.

He admits that so high a degree of humidity is uncomfortable, but says the remedy is a reduction in temperature. He suggests that the desirable temperature of a room is 64°, not 70, in which case the humidity should reach 80%, and that these are the conditions under which the health of the community is best.

These standards established by Dr. Huntington as a result of 15 years of research involving the study of 60,000,000 deaths are confirmed by Dr. E. Vernon Hill, past President of the American Society of Heating and Ventilating Engineers and editor of the *Aerologist*, and J. J. Aeberly, engineer of the Bureau of Sanitation of the Chicago Health Department, who found that the ideal temperature and humidity arrived at by Dr. Huntington, 64 degrees and 80% respectively, correspond with their own experimental data on this subject. Thus both the air-conditioning engineers and the climatologist agree that moist cool weather is better for health than dry warm weather.

For those who desire to study this subject more in detail, we would refer them to an excellent pamphlet on the subject entitled "Humidity in the Home", published by the Holland Institute of Thermology, at Holland, Michigan, and known as Bulletin No. 1. This Institute has

recently been founded by A. H. Landwehr, President of the Holland Furnace Company, with the announced purpose of "teaching the American home-owner the science of healthful heating through the control of temperature, humidity and air-motion".

FURTHER RESEARCH PLANNED

This is not a case where we should "fear the Greeks, even though bearing gifts". For, although the Institute may be an adjunct of an industrial concern with a product to sell, it is performing a highly useful public service in educating the community to right principles in ventilation. In addition to its general purpose, the Institute of Thermology announces its intention to conduct research into the following phases of the relation of humidity, temperature and circulation of air to the public welfare:

1. The most economical ways of using our fuel resources.
2. The economic loss due to soot, and how it can be prevented.
3. Diseases resulting from improper or inadequate humidifying of dwellings.
4. Seasonal occurrences of certain respiratory diseases and its modification by control of humidity, temperature and circulation of air in dwellings.
5. The amount of heat, and consequently of money, lost in the average American building because of improper construction, and methods of correction.
6. Effects of excessively dry interior atmosphere upon rugs, furniture, musical instruments and other furnishings, and methods of prevention.
7. Medical analysis of all phases of air-conditioning so that the atmosphere of home, office and factory may contribute to health and efficiency of occupants.
8. Number of air changes required in each room per hour to keep the atmosphere that is breathed free from noxious germs.
9. Methods by which air may be sterilized in order to minimize circulation of disease ridden air through building.

THE "COMFORT CHART"

While the "comfort chart" need not necessarily be taken as the last word in the science of air-conditioning, it is true that on the whole this represents probably the closest approximation to the relations between temperature and humidity that has thus far been worked out. This "comfort chart" was developed by the American Society of Heating and Ventilating Engineers, working jointly with the United States Bureau of Mines in a laboratory at Pittsburgh, and represents the results of experiments carried on through a 10-year period. The "comfort chart" seeks to show on a series of squares by means of a diagonal line the relation of temperatures of varying degrees and the amount of humidity in percentage that should go with those temperatures in order to ensure comfort in a room.

For example, if the temperature of one's living room is 70°, reference to the chart shows that the "comfort line" crosses the 70°

temperature line at a point mid-way between 40 and 50% relative humidity; therefore, the proper amount of humidity in a room heated to a temperature of 70° is 45%. If the room temperature is 65° instead of 70°, reference to the chart shows that the "comfort line" crosses 65° exactly at a point on the line representing 90% of humidity—which means that for a room to be comfortable in which the heat is 65° the relative humidity must be as much as 90%.

HOW MUCH WATER MUST WE EVAPORATE IN THE HOME?

One of the interesting tables in the pamphlet "Humidity in the Home" to which we have just referred deals with the amount of water that the average householder will have to evaporate each day in the winter to keep his home healthy and comfortable. The table shows the conditions which should prevail in different parts of the country—the New England states, Mid-Atlantic, South Atlantic, South Central, North Central, Mountain states and the Pacific states. It gives the average out-door temperature for these states according to the Weather Bureau, and the average out-door relative humidity, and then shows the amount in gallons of water that will have to be evaporated each day in houses of different size starting with a small 4-room bungalow, containing 5,000 cubic feet, and ending with a larger home containing 25,000 cubic feet, and showing for 6 different types of homes in between these two extremes the amount of water that will have to be evaporated each day in order to keep the home in its proper condition of humidity.

How important air-conditioning is to industry is evidenced by the news that an air-conditioning and cooling plant has been installed more than 6,000 feet below ground in the Morro Velho gold mine at Nova Lima, Brazil, at a level where the normal rock temperature exceeds 120° F. and where the normal humidity is excessively high. It is stated that in this fabulously rich gold deposit men would die in an hour unless protected by the modern magic of "manufactured weather." Nor is this use of air-conditioning by any means confined to industry. Synthetic atmospheres have been developed also in connection with hospital practice. The remarkable results achieved by the Rockefeller Institute for Medical Research in New York City in reducing deaths from pneumonia by placing patients in an atmosphere containing 40% of oxygen—about twice the normal concentration—is too well known to require discussion here.

TAKING HUMIDITY OUT OF THE AIR IN WASHINGTON

One of the latest experiments being carried on in this field, is the work undertaken in connection with public buildings at Washington by Major S. Munson Corbett, until recently on the staff of Colonel U. S. Grant, 3rd, in charge of public buildings and public parks of the national capital. In addition to being a medical inspector and major of the medical corps of the U. S. Army, Major Corbett is a professor at the School of Medicine of George Washington University.

Nearly three years ago Major Corbett with Colonel Grant's authority and under his direction started experiments and research work with the purpose of seeing what results could be accomplished by air-conditioning in office buildings in Washington in the summer time, primarily with the purpose of making the government departments more endurable in the excessively hot weather which that city often suffers from.

Realizing the splendid results that have been obtained by increasing the moisture in the air in heated buildings during the winter, it occurred to Major Corbett that by reversing this process he might produce equal or greater degrees of comfort in the over-heated buildings of Washington in the summer time and make work possible on the part of thousands of government employees in a stifling humid atmosphere where work is now extremely difficult.

Urgency was given to this proposal by the fact that thousands of government employees have their offices in the so-called "temporary" war buildings made of light wood construction and staff with tarred roofs—which in the hot summer weather that prevails in Washington become sometimes almost veritable furnaces. Owing to the excessive heat, it is sometimes necessary to entirely suspend work and dismiss the staff and close the offices.

In 1929 especially designed machinery was installed in various buildings with the purpose of taking the moisture out of the atmosphere so as to make the high temperatures more bearable.

MAJOR CORBETT'S WORK

In reviewing the work thus far Major Corbett said some time ago in a published statement:

The results so far have been very satisfactory. One type of machine to supply moisture to heated air was installed in a room where ten physicians were constantly employed at desks. These doctors reported the air was unquestionably improved, that they felt better and noticed much less fatigue.

Another machine of a different type was installed in the room occupied by two officials of the Interior Department. They reported substantially the same as the doctors. All were of the opinion that working conditions so far as the air was

concerned were greatly improved. We know the efficiency and health of workers are greatly improved and there is also less loss of time from sickness and a definite saving of fuel where the proper relative humidity is maintained. Also there is less deteriorating of furniture, fabrics, paintings and books.

Another feature of air conditioning, and nearly as important as humidifying, is dehumidifying. An excessive humidity is about as vicious as too little moisture. Our hot, muggy days in this climate, that are so enervating, are caused principally by a high relative humidity or excessive moisture.

High temperatures reduce efficiency so far as human beings are concerned. They slow down some of the more important physiological functions of our bodies and increase the tendency to disease.

It would be difficult to carry on experiments to dehumidify the air in our Government buildings as they now stand, but it is hoped arrangements can be made to provide this comfort in the new structures. Modern plants are designed to add moisture to the air in winter and take it out in summer with practically the same installation. This would mean that temperature in Government buildings would be held down even on the hottest days to a very comfortable degree, thus eliminating the necessity for closing the offices on hot days.

Furthermore, the efficiency of all employees would be increased throughout the hot season by dehumidification as it would be in the cold season by humidifying the air.

Modern air conditioning plants also provide the necessary heat, properly moistened, to heat buildings in winter, thus eliminating the necessity of separate heating equipment and reducing the original cost of installing air conditioning machinery.

Hospitals, in my opinion, would be greatly benefited by humidifying the air in winter and dehumidifying in summer. Moist air in operating rooms would reduce the liability to explosions of the ether by sparks caused by static electricity.

It would provide greater comfort for all patients, especially those suffering with respiratory affections. Every one knows the efficacy of the croup kettle, which is nothing more than a humidifier with some medication added. In summer, if the air in hospitals was dehumidified and cooled, patients would not only be more comfortable, but recovery would be expedited. Metabolism is sped up, the body functions more efficiently and resistance to disease is increased.

A GLIMPSE INTO THE FUTURE.

In discussing this matter for *Housing* recently, Major Corbett said:

With our enormous public building programme just launched it seemed essential that thought be given to air rectifying and air control. A modern building in my opinion—whether office, home or factory—should be equipped with machinery to rectify air; that is, to provide gentle air motion at all times, to add moisture in the winter, and to reduce the moisture in summer.

We now know that the bad effect of air vitiated by human beings is mainly mechanical and not chemical. In other words, it is not due to the decrease in oxygen, the increase in carbon dioxide, or to the presence of organic poisons, but to the temperature of the air, a relative moisture content either being too high or too low, and to the velocity of the air.

Assuming that our principal concern with air in modern buildings is its thermal relation to the body, or its ability to assist the body in maintaining its proper temperature, cooling effects of outside air are determined both by its own temperature—ability to cool by conduction and convection; and by its dryness—ability to cool by evaporation.

In the climate around Washington during the summer we find very high wet-bulb temperatures, or very high humidity, which greatly diminishes the principal natural cooling effect—that of evaporation. This condition is so oppressive at times that it is impossible to work

efficiently and it is necessary to close offices, resulting in an economic loss. We are now arranging to install dehumidifying and air cooling equipment in a portion of one of the Government buildings which should make the working conditions in the hottest weather as pleasant as the cooler days in the fall and spring. This will not only increase efficiency of employees but make them more comfortable and reduce sickness.

During the winter of 1928-1929 we carried on some practical tests in a small way with machines that would add moisture to heated air, which were quite satisfactory. It is known that air at the freezing point has a capacity of 2.1 grains of water per cubic foot, and that if the air is heated to 70° Fahrenheit, it has a capacity of about 8 grains per cubic foot. When water is not added, this dry air produces a dry-kiln effect on animate and inanimate objects. To supply the necessary moisture or to raise the relative humidity, required at certain times during the winter as much as several gallons of water daily for the ordinary size room. Dry air extracts moisture from any available source, from mucous membrane of the nose and throat and body surface, as well as from fabrics, furniture and woodwork.

In human beings this action of the dry hot air has a definite physiological effect. It increases the tendency to disease, especially of the respiratory group, increases nervousness and fatigue, and decreases ability. In fact, there is no reason in my opinion why air can not be rectified to simulate the most ideal climate and made more or less to suit the individual. People suffering from sinus troubles—for example—in our eastern climates, if provided with rectified air should be as comfortable as if they were in a climate naturally suited to such conditions such as our southwestern localities.

Patients suffering from any of the respiratory diseases would be much more comfortable and recovery expedited if breathing air of proper relative humidity, which knowledge is old as evidenced by the use of the croup kettle which is simply a crude humidifier, medicated.

Dr. Corbett adds that there are a number of devices on the market that will perform these important functions quite satisfactorily.

BODY COMFORT VERSUS HEALTH

Discussing the results of these experiments a few months ago in the magazine *Heating, Piping and Air Conditioning*, Major Corbett stressed the importance of considering this question of air conditioning more from the point of view of health than of comfort, on this point having the following to say:

Mechanical ventilation is most certainly in its infancy to-day and while body comfort has been achieved, unfortunately, no apparent great accomplishments have been made in the promotion of health in spite of the fact that in providing air motion, more or less satisfactory dehumidification and cooling in Summer and humidification of a sort in Winter, together with rather efficient methods of air washing, strides have been made in the right direction.

It seems to me that had the physiological needs of the body been the paramount feature rather than apparent body comfort, the results obtained would have been more favorable to controlled ventilation*****

We know that if we disturb the chemical or intercellular balance of the cells of the respiratory tract we break down or weaken our "first line of defense" against colds, "flu" and other infections of this nature. And yet the comfort chart permits, within the higher ranges of the comfort zone, such degrees of dryness as would unquestionably bring about this condition. Body comfort, it appears to me, should have been determined only after the loss of moisture consistent with the physiological welfare of the cellular structures of the body have been established. Also, body metabolism and its relation to heat, air motion, and humidity should be given further study.

Possibly barometric pressure may be found to exert an influence upon the relation between body function and air conditioning; for, as we know according to Henry's law, all gases including oxygen are absorbed in direct proportion to the atmospheric pressure.

Major Corbett has stated recently that he recommends air conditioning—or at least the ducts therefor—in all new construction, whether bungalow or skyscraper, and says that he thinks that within the next few years purified or conditioned air will be considered as important as pure water is today.

HUMIDIFYING DEVICES

An interesting description of the various humidifying devices that are on the market, as well as an account written for the layman on the subject of air-conditioning, will be found in the October, 1930, issue of the *The Small Home* in an article entitled, "Weather Made to Measure," by Susa P. Moore, an article in an earlier issue of this same journal viz., that for March, 1929, having dealt with this same subject.

Some of these systems are thus described.

One system consists of a thin, box-like container with a spray of water, pointing downward, inside the box and near the top; the direction of the spray causes air to rush in, through the mist, and then, moisture laden, out the bottom. Such a device can be placed in the wall between the studs with a grilled opening at the top for the entrance of the air and another grille lower down for its exit. This particular model is designed to be built into the house, but another can be hung in a closet and two short ducts passed through the wall to the adjoining room and a neat grille placed over the opening. A model based on the same principle can be purchased in a console enclosure; a fan helps circulation.

Another humidifier consists of a radiator with horizontal instead of vertical coils; the top of each coil has a shallow hollow which contains water to a depth of about $\frac{1}{4}$ inch; the supply of water is from a spigot and the heat from the radiator coils—of which there may be a number—evaporates it with great rapidity.

Still another type of humidifier is substituted for a radiator, furnishing the same amount of heat as well as humidifying the house. A motor driven fan drives air through a chamber where it is heated by heat produced by the furnace, in order to increase its moisture-carrying ability and also to furnish part of the heat required in the evaporation of water. This heated air is then passed over fine streams of water, where it is washed and humidified, and then discharged out into the room, from which it circulates over a larger area.

In the spraying of the water or in the evaporation, a current of air is set up which not only moistens the air but also sets it in circulation throughout the house. There may be pockets which are not reached by the humidified air, but in that case, the remedy is to change the location of the humidifier or to add another.

There is a limit to the amount of air which any humidifier can handle and the only solution is to get an additional unit or a bigger one. However, for an average small house either of those mentioned will be satisfactory. Before you buy one, investigate to find out how much they will evaporate and what kind of a guarantee the maker will give. Humidifiers cost from around \$100 up to almost

\$400, with the mean around \$200, so one should not be bought ignorantly. But their saving in depreciation of furniture and fabrics is of value. Also, many physicians are convinced that over drying of the mucous membranes makes a good forerunner for colds and other throat irritations.

An illustration shows one of these humidifiers in the form of a very graceful and charming console—which leads us to hazard the suggestion that it will not be very long before a caller in a home will see an attractive piece of furniture standing on the floor, and will probably not realize that it is an apparatus for humidifying the atmosphere and also the family radio.

We know no reason why these two functions could not be combined in the same piece of furniture—and we have no doubt that they ultimately will.

THE WINDOWLESS BUILDING

Whether the buildings of the future are to be entirely without windows—with the people living and working in such buildings depending for their light upon artificial light, securing ultra-violet rays from the lighting unit, and for ventilation and moving air depending upon air-conditioning and artificial ventilation—is soon to be put to the test. At any rate, we are to have an object lesson of what such a building is like, and an opportunity for our scientists to test under observation whether it has the advantages claimed for it, and whether in future it will be more conducive to the health and welfare of the people to live and work under such conditions.

In the city of Fitchburg, Massachusetts, a great new manufacturing plant is being erected by the Simonds Saw and Steel Company. The architect's drawing of this low flat building, very much in the modernistic manner architecturally, shows a building with horizontal lines and solid mass and with no openings of any kind other than a few door openings to receive goods. It is stated that the building when completed not only will be entirely without windows, but the workers inside of this modern factory will work at orange colored machines in shops with blue and green walls and will receive ultra-violet rays from the lighting units. That the projectors of this enterprise have faith in it, is evidenced by the fact that a million and a half dollars is invested in the new plant.

Before making this momentous decision, the company carried on certain experiments which indicated to them that an increase in the efficiency of the workers by as much as 33% would result from uniform artificial light, control of temperature, absorption of sound and the use of color.

Other features of the building in addition to solid walls without windows and roof without skylights, are acoustical walls and ceilings; change of purified and tempered air every 10 minutes; heavy machines isolated by cork pads; and lighting by means of 1,000-watt lamps.

As the building is now under construction, the people of the United States will have soon an opportunity of putting to the test recent theories with regard to conditions of living and industry.

NEW YORK ALSO TO HAVE BUILDINGS WITHOUT WINDOWS

The great Radio City development that John D. Rockefeller, Jr. is projecting in the heart of the mid-town section of New York on three blocks extending from 48th to 51st Streets and from Fifth Avenue to Sixth Avenue, to be developed at a cost of \$250,000,000, is to have among its many novel features, a great central skyscraper the lower 15 floors of which will be entirely without windows. The National Broadcasting Company is to occupy these lower 15 floors, and for its purposes the air in that section is to be conditioned and those portions of the building made sound proof.

HEAT WHERE YOU WANT IT WHEN YOU WANT IT

“Tempering the wind to the shorn lamb” is nothing compared to what we may expect in our homes in future if scientists continue to apply the discoveries of recent years to the processes of living.

It has always been a matter of comment on the part of foreign visitors to the United States—particularly our English cousins—that American homes are terribly over-heated, and English visitors generally suffer greatly from the conditions they are forced to endure during the winter months in the United States, especially in our public buildings. The worst conditions are not encountered in individual homes but in such public places as hotels, restaurants, theaters, railroad stations, public conveyances and other places where the public congregate, due largely to lack of education on the part of the great mass of the American people as to what constitute proper standards of temperature and ventilation.

Since we have learned that the old theories of ventilation no longer apply—and really never did apply—and that the amount of carbon-dioxide in the atmosphere is of comparatively little importance, but that the fundamental elements in what we are pleased to call good ventilation consist in avoiding excessive temperature, excessive moisture, excessive dryness, and in securing movement of the air, it ought to be

possible to bring about changes in the construction and equipment of our homes that would carry these principles into practice.

We are glad to be able to report that at last it is evident that these principles are to be applied to the homes in which we live. The great motion-picture houses are probably more responsible for giving impetus to this movement than any other factor; for, with their great audiences that have to be made comfortable in summertime as well as in Winter, they have applied the science of "air conditioning" to their buildings in such satisfactory fashion that the public generally is beginning to realize the comfort and relief it can have by similar methods.

One of the interesting developments in the heating of rooms has recently been put upon the market and is known as the "Air-Way Aeriet", manufactured by the Air-Way Electric Appliance Corporation of Toledo, Ohio. The purpose of this invention is to apply heat to that portion of a room where it is chiefly desired and not to allow it to rise to the ceiling serving little useful purpose there—as is the case at present.

Two types of this method of heating have been devised; one an electric one which uses electricity for fuel, the other provides a heat element that is connected to the hot water or steam pipes.

In both types a motor-driven fan draws the air into the "Aeriet", passes it through the specially designed heating element and projects it into the room again. Both the electric and the hot water or steam device are concealed within walls or partitions and eliminate the necessity for radiators which take up unnecessary space in rooms and make the arrangement of furniture often quite difficult.

The "Aeriet" gently forces live, warm air into that part of the room where it is needed—the living zone. Heating efficiency is thus increased and a saving of fuel effected. Built into each unit is a quiet operating small motor and fan assembly. Warm air is thus delivered at knee height out into the occupancy zone of the room, instead of allowing it to rise directly to the ceiling.

The manufacturers of this device claim that with the motor operating at maximum speed it has approximately 4 times the heating capacity of the same size concealed heating element. One of its advantages is that the motor may be operated at varying speeds, thus allowing an adjustment of the temperature not enjoyed by other heating devices. At low and intermediate speeds the motor and fan are said to be noiseless; at high speed used for warming up the room to start with, there is a slight noise that is said not to be objectionable.

With the "Aeriet" rooms may be individually heated and temperatures controlled to meet varying conditions or personal preferences,

either by hand or by means of electric thermostatic control. The steam and vapor "Aeriet" is made in 3 different sizes with varying heating capacities. The installation is compact and requires about half the wall space of the same capacity of concealed heating element—a distinct advantage as it gives more rentable floor space and makes for a more attractive and flexible arrangement of furniture. The electric "Aeriet" is available at the present time in two types—the portable type and the built-in or wall type.

The portable electric type has the approval of the Underwriters Laboratories and cannot burn anything which may come in contact with it—being absolutely safe either within the wall or the room.

One of the advantages of this new device is that it may be used during the summer months to maintain a steady flow of air currents throughout the building or room, thus controlling temperature during the warmer seasons.

THE HOME A HUMAN THERMOS BOTTLE

While this description of one of the latest devices for heating homes is perhaps not strictly accurate, speaking scientifically, yet it does give a popular conception of what the new method of heating means. A system of electric heated homes is now an actual reality and it is only a question of a short time before such methods of heating are likely to have general application.

The new method employed is a method of electric heating developed by Chester I. Hall, President of the Hall Electric Heating Company at Philadelphia. While a research engineer for the General Electric Company, Mr. Hall developed a new method of heating buildings, and it is this method that he has now perfected and his company is prepared to install in buildings.

The method consists of heating large thermal storage tanks of water, using electric current only at night for this purpose—when it can be obtained from the public utilities at the lowest cost—and then releasing this stored heat within the home as required. This system can be installed either as a hot air, hot water, vapor or double-pipe system. The charging or storage of the heat is substantially the same in all cases, the only difference being in the manner of discharging it.

The general principle of this system Mr. Hall describes as similar to that of the thermos bottle. In other words, the heat is stored in a well-insulated large thermos bottle, or tank, and is drawn off by the customer when he has need for it.

CENTRAL HEATING IN SCOTLAND

Both central heating and central station heating are so little used throughout the British Isles that the successful operation of a central heating scheme in connection with a number of municipal housing enterprises in Scotland is a matter of great moment to housing reformers in Britain and has interest for other countries as well.

Over ten years ago, in 1919, the authorities approved the installation of a central heating and domestic hot-water scheme on the municipal housing estate at Logie—part of the city of Dundee—and such a system was installed.

The housing development consisted of 250 apartments arranged in flats of low height, with 4 apartments to each group. The original heating system consisted of 3 Lancashire boilers from which hot water was supplied to 662 radiators and 750 hot-water taps. In all there were 24 calorifiers for domestic hot water, and 24 similar calorifiers to radiators; these were fitted in pits adjoining the ducts in the streets. The cost of this plant was £24,824.

It did not take long for the authorities to discover that this system was destined to be run at a considerable financial loss. In 1923 when criticism was at its height it was reported that the financial loss on the installation in these 250 apartments amounted to £6,353. To a Scotsman this was not to be borne. Consequently, drastic action was taken and the responsibility for the administration of the system was transferred from the housing committee of the local authorities to a committee that controlled the public baths and a new superintendent was given full control.

According to reports made public recently, this change of personnel and redistribution of responsibility have had satisfactory results. The entire system was reconstructed and the changes were completed in April, 1925. Since that time, instead of an annual loss from the operation of the central heating and hot-water supplied to the tenants on this estate, there has been an actual surplus. In the year ending May 15th, 1926, this amounted to £243; in the year 1927-1928 the surplus had increased to £586 and in 1929 was approximately £394.

With the success of this method thus well established it has been extended to other housing estates, a central hot-water system serving 268 families at Stirling and Hospital Park in Dundee. The surplus from the operation of these latter plants in 1929 was £621, in addition to £1,000 paid out of surplus revenues into a depreciation fund.

A word may not be amiss as to how it works. Each tenant pays 3s 2d per week for these heating and hot-water services for an apart-

ment of 2 rooms and kitchenette; and 4s per week in an apartment of 3 rooms and kitchenette.

Although the consumption of hot-water for domestic use has increased by 35% on the Logie housing estate, the coal consumption has been reduced by 45.6%—a most creditable showing.

The advantages of the new system are obvious; the labor of the women in the houses is considerably reduced and it is much easier to keep the homes clean; risks of fire are diminished and the atmosphere of the city of Dundee is less polluted by domestic coal fires; in addition, tenants have a plentiful supply of hot water at all times.

The adoption of similar methods throughout England and Scotland, would practically abolish their smoke problem—or at least so reduce it as to make it almost negligible. With the reduction of smoke will also go many of the fogs from which England and particularly London suffers so frequently. While this result is something greatly to be desired, we should, I am sure, share the regret of many Londoners if “London Particulars” were no longer to be encountered.

DENMARK POINTS THE WAY FOR CENTRAL STATION HEATING

For many years American housing reformers have been wondering why central station heating was not a practicable scheme for the smaller cities where the population lives in single-family detached houses not spaced at too great distances.

While there have been a few instances in the United States where such methods of heating have been applied, they have only been successful where the heat was the by-product of some industrial plant, and where it was not necessary to transmit it to too great a distance—it being impossible to transmit it to a great distance without prohibitive cost, due to heat losses in transmission through lack of proper insulation.

Now comes news from Denmark of a remarkably successful use in that country of a new form of insulating material—at least new to the United States, but used in building processes in Denmark and other European countries for some years now—by which this great loss of heat through conductivity can be so met as to make the transmission of heat from a central station to houses at a considerable distance quite practicable.

The new insulating material that makes this possible is known as “Cell-Concrete,” invented in Denmark as a building material about

six or seven years ago. Because of its cellular construction this material is found to have better insulating properties than other materials ordinarily used for the purpose. It is made of cement, or cement and sand, to which is added a foam which causes the mass to become honeycombed with air cells. It is thus very light in weight and may be precast in blocks and afterwards cut to the desired external diameter and internal bore for pipe coverings.

In long distance heating systems the method employed is to have the cell-concrete placed *in situ* in the street trenches, the pipes that distribute heat being placed as the cell-concrete is poured. The insulation thus serves a dual purpose of lining the trenches and insulating the pipes. Although cellular the material is not porous.

The first experiment made with this new insulating material in connection with the distribution of heat at some distance was made in Copenhagen by the municipality in 1924 and affected an experimental section of about 110 feet in length. After this had been in successful operation for a year, it was extended for a further distance of about 440 feet. This section laid in 1925 carried hot water from an electricity station at Gothersgade to two office blocks in which were located the offices of the municipal trolley and electricity departments of the city.

Close observations were made of the workings of this new system for over a year; the results being satisfactory, a new installation was made of heat-transmission pipe-lines extending to a distance of 9500 feet from the Eastern Copenhagen electricity station—supplying heat to a church, a sports pavilion, a lodge building, a soap factory, two hospitals and two almshouses. In these buildings the heat transmitted was used for general heating, for washing, for baths and for industrial purposes.

Under this system the total amount of heat transmitted is 16,000,000 calories per hour corresponding to an hourly coal consumption of approximately 4 tons. The installation was put in operation at the beginning of 1927; after a year's experience it was so successful that the municipality decided to develop the system in connection with the Gothersgade Electrical Works where the first experimental pipe-line had been installed.

It being necessary to rebuild a hospital at Gothersgade, it was found that it would be cheaper to transmit heat a distance of 3,300 feet from the electricity works under this new system than it was to install an individual boiler plant at the hospital. The amount of heat transmitted this distance of 3,300 feet is 11,000,000 calories per hour, equivalent to approximately 2.2 tons of coal per hour.

So successful were these installations that when the town of Aarhus decided to erect some new electrical works, a new railway station and a series of blocks of flats, it was decided to so design the electrical works that they would serve as a combined electricity and heating station and supply these new buildings with heat as well as other public services. Thus far a total length of about 4,200 feet of pipes has been laid from this electricity plant supplying hot water to the central railway station, to the new blocks of flats, to business premises, to a large hotel and to other buildings—in all a total of 15 blocks of buildings. The present capacity of the plant is 7,000,000 calories per hour, which it is proposed to increase to 15,000,000 calories, corresponding to a consumption of $3\frac{3}{4}$ tons of coal per hour.

All of these results have been made possible almost entirely by the method of insulation employed, thus reducing heat losses to a minimum. In all other respects the method of transmission is the same as has been used in other places in the past—but with less success. A further advantage of the use of this insulating material is that the time required to lay the ducts has been greatly reduced. Under the ordinary methods employed a trench is dug and lined with concrete and the work is held up until the concrete has hardened. In addition many insulating materials have to be applied to the pipes when hot while the steam or hot water is flowing through them. With the new cell-concrete, however, the insulating material also acts as the trench lining and as the pipes can be covered with the cell-concrete while they are cold, the work of pipe laying can proceed without interruption.

From this it would seem as if Denmark had supplied an effective method of making central station heating a practicable thing for housing enterprises in all countries.

RECENT DEVELOPMENTS IN CANADA

The City of Winnipeg in Manitoba, Canada, has been in recent years developing central station heating. It built its first central heating plant in 1925 as a municipal enterprise—the first of its kind in Canada. This now serves more than 200 buildings. Recently the taxpayers of that city have approved the expenditure of \$450,000 for an extension of the plant and plans are now under consideration for spending an additional million dollars to carry the steam lines into the suburbs.

In Winnipeg there are two companies supplying central heating service in residential and apartment block districts. In 1928, the

Winnipeg Heating Company started building its plant and laid down 27,000 feet of steam distribution system, connecting to this 354 residential customers for the heating season of 1928-1929. In 1929 they added 18,000 lineal feet of steam distribution mains to their system, and the next year added another 10,000 lineal feet. At the present time they are serving 1027 residential customers and 17 apartment blocks. The steam is sold at \$1.60 per thousand pounds, with a 5% discount allowed if payment is made within 10 days. The rate for apartment blocks is \$1.30 per thousand pounds.

Officials of the company state that the customer's cost for their service averages from 10 to 20% more than the actual cost of good domestic coal at \$15.50 a ton.

During the coming year this company plans to go into a new district, to build a new plant, and to lay down from 30,000 to 35,000 lineal feet of new underground steam mains to be interconnected with their existing system.

Another company, the Northern Public Service Corporation, which only started its work a year ago, distributes both hot water and steam for heating purposes and is now serving approximately 800 customers. By October first next, it is estimated that the combined companies will have sufficient distribution system to serve approximately 5,000 dwellings and 150 apartment blocks.

From all of which it is evident that a system of central station heating is something that is rapidly approaching in Canada and will before long become part of the accepted methods of living in that country.

“CERTIFIED HOMES” ARRIVE

There is no more reason why the home builders and home purchasers of the country should not have “certified buildings” than that people should not have certified milk or other certified products.

Three years ago we advocated in these columns a scheme of certified buildings and outlined a plan by which such a system could be brought about. At that time the National Association of Real Estate Boards was giving serious consideration to the adoption of some such plan as a means of meeting the “new competition”.*

Although the organized realtors of the country have not apparently taken up this idea actively, the idea has been seeping through the minds of various groups throughout the country until “Certified

* See “*Housing*”, *March, 1928, Vol. 17, pp. 58-64.*

Buildings'' can be said to have arrived. The scheme is no longer in the experimental stage.

Just as the great financial interests represented by the Metropolitan Life Insurance Company inaugurated such a scheme for their own protection years ago closely supervising the buildings on which they made loans, so it is not surprising to find another great financial institution—the Building and Loan Associations of the country—taking up this idea actively and effectively.

BUILDING AND LOAN ASSOCIATIONS TAKE IT UP

They have embraced it as the one service that will place Building and Loan Associations far in advance of any other type of home financing institution.

In an editorial published in the *American Building Association News* about a year ago, commenting on the remarkably successful results achieved by the Shreveport Mutual Building Association of Shreveport, Louisiana, in inaugurating and carrying through a scheme of close supervision of the homes built in that community through a 7-year period, this journal has the following to say:

It would be far safer to presume, or assume, that this Association would have established the service just when it did whether its assets had been two million or ten million. Supervision was established to meet a definite need, and not as a something-for-nothing "elixir" to temper competition and prolong the life of the Association. Naturally and inevitably the service did help to meet competition—in fact, became the greatest builder of business the Association ever had—but wholly because it assured home buyers that they were getting homes that would give maximum performance at minimum cost; homes that would be homes as long as their owners could reasonably expect to need them.

Those who financed new homes through the Shreveport Mutual Building Association after supervision was adopted paid for the service—and paid for it with a smile. It gave them something they had never known before; positive assurance that a dollar invested in a home would buy a dollar's worth of value. If instead of five million, the Association had had two or ten million in resources at the time this service was begun, borrowers would have paid for it just as willingly—even though the charge had been a little less or a little more—but with a smile, nonetheless.

To the editor of that journal, there seems to be no reason why the methods that have been adopted so successfully in Shreveport cannot be applied in every community throughout the United States and by all Building and Loan Associations as an integral part of their work. They say:

By setting up proper specifications for material and construction and establishing a supervisory department under the direction of an honest, efficient, reputable architect or builder, the Associations of every such community can assure the home-buying public that every building-and-loan-financed home is a good home.

They add:

The same individual wants a *good* automobile, a *good* radio, a *good* home, etc. He has comparatively little difficulty in satisfying his desires for the first or

the second of these, nor for a long list of similar items. A manufacturer of many years' experience and world-wide reputation sends him a complete product—ready to use—guaranteed for so many months or years and serviced free of charge for a specified period. A dollar down and a dollar a week for the rest of his life and the product is his.

When this same individual goes to buy a home, however, he is confronted with an entirely different situation. He is offered a conglomerate mass of material brought together from the four corners of the country and put into place by men about whom he probably knows little or nothing and for whose performance nobody is responsible.

And finally they say, "Give the public the kind of homes it wants and it will buy homes, just like it buys radios, automobiles, washing machines, etc."

SHREVEPORT'S PIONEER WORK

The pioneer work undertaken by the Shreveport Mutual Building Association—a pioneer at least in this country for Building and Loan Associations—in supervising and certifying the homes built in their community on loans made by them, is of such great value that we are tempted, so far as the limitations of our space will permit, to quote at great length from the account of Philip Lieber, the President of that organization, describing their experience in 7 years of supervision of home construction, published in the *American Building Association News*.

One of the first things they learned when they started on this work was that there was no use in simply having specifications and leaving it to the presumably reputable builders of their community to see that the specifications were carried out. As they said

A trial of 6 months convinced us that we might as well not have specifications as to leave it to the builders whose activities had caused our worries to continue building without being watched.

Accordingly, they decided to have a skilled man represent the Association in the supervision of all houses on which it was proposed after completion to obtain a loan from their Association. This was in 1923. At that time, the Association had \$5,000,000 of assets and was lending money at 7%, and had been paying 6% dividends for a number of years, with a fund of about \$50,000 a year for gross operating expenses less about \$10,000 that had to be placed to the reserve account required by law.

To carry out this supervision service satisfactorily they realized would cost them about \$8,000; this would cover the salary of the inspector and of record keeping and transportation and the general overhead involved. How to carry this expense became a very practical problem. Local architects had been charging for supervision a fee of 3% of the

cost of the building. The Association began by charging a 1% fee of the total cost. They tried this for a year and their profits were so substantial that they were able to reduce the fee to $\frac{3}{4}$ of 1%. The second year their business increased so much they again reduced their fee, this time to $\frac{1}{2}$ of 1%. Later, their business having practically doubled because of this supervision work, they were able to eliminate the special charge altogether, and simply required a deposit of 1% of the total cost of construction as an evidence of good faith—this deposit going back to the owner immediately on closing the final loan.

As was to be anticipated, the Association in starting in on this work encountered much opposition and resentment, not only from the Jerry builders but even from the higher class builders in their community, who regarded this scheme as an implied criticism of their own integrity.

In less than 6 months, however, these reputable builders realized that the service was making the speculative builders put sound materials in their products, thus preventing them from underbidding and underselling the efficient and honest type of contractor, as they had done in the past.

HOW IT IS CARRIED OUT

A word as to how the scheme works. In the city of Shreveport, at the beginning they were able to get along with one inspector, a man of very high calibre, both engineer and architect. He was able to make the rounds of the various houses under construction and keep up to as many as 75 houses under supervision at one time. It was, of course, not necessary to visit each house each day. The important thing was to visit the house at critical times. The first and most important time when inspection is needed is when the excavations have been made for the foundation. Under the rules of the Association in this new plan no house could be proceeded with until the excavations had been approved by their inspector. Again, no excavation can be filled until the inspector approves the footings and walls. From that time on, sufficient visits and careful inspections are made to insure a complete knowledge of everything in connection with the construction.

After a building is completed in Shreveport and accepted as satisfactory by the Association's inspector, a certificate is issued to the owner when the house is purchased. This certificate states that the Association has supervised the construction of the house and that its requirements have been carried out. Naturally, the Association does not assume any liability for making good defects that may later result—that would, of course, be quite out of the question.

In discussing this work, Mr. Lieber rightly calls attention to the great difference between supervision and inspection.

The primary purpose of our supervision is to prevent errors in construction; its secondary purpose is to detect errors in time to have them remedied. It not only does these things, but it has the effect of deterring those who would profit by such "errors" from deliberately making them.

The work undertaken by them 7 years ago has now grown to such proportions that they have had to double their staff, and have had also to develop a series of standard specifications which serve to a certain extent as a local building law establishing minimum standards of construction. This manual of specifications embodying the minimum grade requirements they rightly call the "nerve center" of their department of supervision. The system having now gained general acceptance in their community, every one who contracts to build and who actually works on a dwelling where loans are made by their Association is possessed of one of these booklets—thus greatly simplifying the task of supervision. What effective supervision means can be understood when it is realized that from 15 to 50 visits must be made to each house under construction, depending upon the size of the job and the length of time the work takes.

BUILDERS LEARN A LESSON

During the first year of this service the builder had to be taught that no foolishness would be entertained and many thousands of dollars' worth of work had to be torn out and replaced before some of the builders learned their lesson. The same thing happened in New York City when efficient and honest tenement inspection was inaugurated under the de Forest-Veiller regime 30 years ago, when for the first time in that city there was honest and actual inspection of new buildings under construction.

Mr. Lieber gives many interesting and amusing experiences that they have had, and relates in considerable detail instances where the builders and contractors were forced to remove defective work at great cost to themselves. In one case where the builder used lumber of an inferior grade—though warned not to use it, he disregarded the advice—it cost him \$3,000 to tear it out, plank by plank. In another instance where the Association was asked to make a loan on a building that was already 75% completed at the time the request for the loan was made, they very wisely required from the contractor a "maintenance bond" to keep the building in good condition for a period of one year, before they would make their loan. In 10 months it cost the contractor of

that particular building \$2600 to place the house in good condition; \$400 spent wisely in the beginning of the job would have prevented all of this. Of course the contractor expected to "get away with it." Had he realized that he couldn't, he naturally would never have "skinned" the job in this fashion.

That this work of supervision of home construction has proved not only successful in improving the standards and character of the homes built in Shreveport, but in greatly aiding the standing and development of the Shreveport Mutual Building Association, is evidenced by the statement that during the 7 years that supervision of home construction has been in vogue by this Association, they have almost trebled their assets and practically eliminated outside competition.

The idea has so gained acceptance in their community that to-day in most cases the first question asked by a prospective home-purchaser is, "Is this a Building and Loan supervised house?" Mr. Lieber in concluding his review of this experience rightly says:

Our experience can be duplicated in almost any section of the country if the building and loan managers will forget quantity and be satisfied with quality for a while. Quantity will come. The road will appear rough for a while, but complete success is bound to attend the efforts of those building and loan executives who will recognize that the future has success or failure in store for us in proportion as we offer service to the public in many ways beyond the mere exchange of money.

THE IDEA SPREADING

Influenced undoubtedly by the example of this successful work in Shreveport, the great Railroad Co-operative Building and Loan Association of New York City has begun to supervise the construction of all new houses on which it lends money. Nor is this work confined to the East or the South.

The Oklahoma City Building & Loan League has recently perfected a central bureau to supervise the construction of all new houses financed by building and loan associations in that area. After operating this Better Homes Construction Bureau for a few months, it was found that the interest of every one concerned would be advanced by co-operating with other loan organizations who were accordingly invited to become members of the Bureau and assist in the expense of operation.

At the present time there are 15 loan organizations maintaining this Bureau and receiving reports of building construction on houses on which they make loans. While the Bureau was originally organized for the more selfish purpose of obtaining better security for loans made by its various members, it is stated that the benefits resulting

from the inspection service have extended to material men, contractors and the public generally.

In an article published in the *American Building Association News* recently, L. P. Sutton, Manager of the Bureau, calls attention to an interesting fact that has apparently been overlooked, namely, that the higher standard of living has been to some degree responsible for poorer construction; and that in Oklahoma, at least, contractors in order to provide the new "gadgets" that are so much desired by the world and his wife to-day in the form of more tile work, more expensive electrical and plumbing equipment, were forced to reduce the cost on those parts of the structure that were hidden and could not be closely inspected after completion, with the result of a general lowering of the quality of the workmanship and materials used in the construction of homes.

Mr. Sutton points out that as a result, very low grades of lumber were being generally used in the smaller houses, and even in many of the larger and more expensive houses built for sale. The number and size of nails was reduced to the minimum. The spacing of piers, girders, joists, rafters, etc., was made as great as the builder dared to try to "get by with." The result of all this was the construction of many houses which, although they made a good showing when they were new, were subject to very rapid deterioration and heavy expense for repairs and upkeep.

How bad that construction was may be realized from the following statement made by Mr. Sutton:

At the time that our first inspections were made No. 3 framing lumber was being commonly used. Very little if any effort was made to brace buildings against wind pressure. Galvanized shingle nails were almost unknown, and the cheapest grade of shingles were being used almost exclusively. Houses were being built very close to the ground, with very little ventilation provided for. Interior masonry bearing walls were seldom seen in the foundations. Very light pier and girder construction was being used, which accounts for the many houses with the interior walls settling and floors inclined toward the center of the house. We do not wish to create the impression that all houses were built in this manner, but the fact that a great many of the houses built for sale were thus cheaply constructed we do not believe any one will deny.

This condition has not been completely changed and many cheaply constructed houses are still appearing, but any one familiar with conditions eight months ago who will go out and examine the houses now being built cannot help but note great improvement in the present construction. The fact that every building is being inspected, and the class of materials and workmanship made a matter of record, will cause any builder to pause before resorting to questionable practices and the use of substandard materials which heretofore have been

covered up. Many builders are following our specifications whenever possible and some have stated that they do not intend to build other than Class A Homes.

Number 3 framing lumber has practically disappeared. An increasing number of builders are using diagonal sheathing and thus increasing the rigidity of the buildings very materially. Rust proof shingle nails and a better quality of shingles are quite common. Many builders are using heavier foundation walls and masonry bearing walls are being provided for the support of the interior weight of the house instead of the light piers and girders. Comments on the general improvement in both material and workmanship have been heard from many sources.

One feature of the Oklahoma method that was not employed in Shreveport is found in the classification of buildings. Under the Oklahoma plan, homes are divided into 4 classes of construction, designated as Class A, B, C and D. The Model Specification covers Class A only and all buildings constructed in accordance with it are given a Class A rating. Class B rating is given on construction which does not fully comply with the Specifications, yet would be considered fairly substantially built. Class C rating is given on buildings which contain low-grade materials and where questionable construction methods are used. The amount of money that will be loaned on this class of buildings is very greatly reduced in order to discourage cheap construction, and if possible, entirely eliminate it. Class D buildings are buildings so cheaply constructed or contain materials so entirely unsuited to the purpose for which they are intended that no loans are made upon buildings of this class.

Throughout the country individually and through local and state organizations building and loan associations are beginning to take up the idea and are giving definite consideration to the early establishment of similar services.

STANDARD SPECIFICATIONS

In order to make the carrying-out of this idea easier for their organizations, the *American Building Association News* has recently prepared a series of Standard Specifications for Residential Construction in the form of a book which it furnishes free of charge to every building and loan association throughout the country. Announcing this publication, that journal says, "It is not intended nor expected that these specifications shall be the occasion or the agent for certification of homes." They rightly add that

Home buyers need better homes, not terminology; they want performance, not labels. Building and loan associations need security, not camouflage.

A word about this publication may not be amiss. Trade names are not used. They also avoid the pitfall of discussion of the relative merits of different materials. As they say, "It is nobody's business whether Bill Jones selects brick, wood, stone or stucco for the outside finish of his house. But once the selection is made, however, it *is* somebody's business and duty to see to it that a *high grade* product is used and that it is so incorporated into the building as to assure a maximum contribution to the permanence of the entire structure."

The "Standard Specifications" constitute in effect a Manual of Small House Construction. In this book of 170 pages will be found practically everything that a builder needs to know with regard to the building of a small home. The book is copiously illustrated with diagrams on each important fact, and covers such aspects of building as the following: Basement Floors, Chimneys and Flues, Sidewalks, Driveways, Porch Floors and Steps, Flashings and Gutters, Floors, Foundation Walls and Footings, Framing the House, Floors, Girders and Beams, Joists, Frame Veneer Construction, Heating, Interior Plastering, Masonry Construction, Plumbing, Roof Coverings, Wiring. In fact there is no aspect of small home building that is not adequately and completely covered by this most valuable Manual.

The book is a product of the engineering departments of the leading national organizations of manufacturers of both material and equipment and thus should represent the latest conclusions of intelligent research, laboratory experiment and actual performance. Necessarily, these specifications are minimum requirements and provide for the major items of material and the more vital points of construction.

To the editors of that journal—presumably voicing the views of the building and loan associations of the country—supervision of construction by building and loan associations is the one immediate effective solution for the many ills to which the home building industry has fallen heir.

THE MATERIAL INTERESTS TAKE UP THE IDEA

That certifying buildings and the materials that go into buildings appeal to other interests in the community is evidenced by the way in which one of the great material interests—the brick manufacturers of the country—have taken up the idea and are pushing certified brick work in all parts of the country. An attractive metal tablet bearing the legend "Common Brick Manufacturers' Association, Certified Masonry-Walls", is being set into the outer wall of all buildings built under this scheme, and is proving a most attractive feature to home builders and home buyers.

The idea is spreading to all parts of the country. It has been taken up with great enthusiasm in the North West, both in Washington and in Portland, Oregon, in the South in Atlanta and other great Southern cities, and in such great centers of population in the East as Philadelphia.

As stated by the organ of the brick interests, *Building Economy*,

The Jerry builders who once thrived and grew financially fat at the expense of the inexperienced and impatient home-builder and buyer are no longer being permitted to get away with construction murder.

As this idea spreads to other interests and the manufacturers of the materials that go into the construction of buildings realize that they will have a much better market for their products when people can confidently count on the integrity of such materials, a situation will soon be brought about by which no other kind of building will be constructed, and home buyers and home owners will no more think of buying a building that is not "certified" than they will of buying uncertified milk.

As soon as all the financial interests of the country—not merely the building and loan associations—adopt this practice, it will become universal; for, those interests hold the key to the situation through their control of the sinews of war.

LIFE EXPECTANCIES OF VARIOUS BUILDINGS

The old saying that "a man is as old as he feels and a woman is as old as she looks" has in recent years given place to the statement that "a person is as old as his arteries."

Buildings are as old as they seem—according to the results of a two-year study of "life expectancies" of various types of buildings made by a Committee of the National Association of Real Estate Boards. This study was made primarily to determine fair standards of depreciation and obsolescence in buildings for purposes of income tax return—a request having been made of this body by the Bureau of Internal Revenue of the Treasury Department to aid them in dealing with this difficult question.

The Report of this Committee which was made public a few months ago, throws much light upon the whole situation of depreciation, and obsolescence, as well as upon that important question of amortization and the organized movement for so-called "modernization" of buildings.

The Committee distinguishes between "obsolescence," which they hold to be due to economic change and fashion, and "depreciation," or

physical wear and tear. They find that it is obsolescence rather than depreciation that determines the end of a building's useful life. When it has ceased to have earning capacity it may, indeed, be said to have come to an end. For, there are few buildings, other than private residences, that are not erected because of their earning capacity.

The Committee finds that the one-family dwelling may look forward to the longest period of useful life of any type of building. The modern steel and concrete skyscraper, however indestructible its materials and however perfect its architectural lines, is part of a business region where life expectancy cannot be measured in terms of how long it may withstand the wear of time, the Committee says, but must be reckoned on how long it will hold its own against new ideas in interior equipment, and against changes in the city itself.

Intelligent zoning should do much to stay this change of neighborhood and the creation of blighted districts that results therefrom. What will change the increasing desire of the American people for every new form of gadget and convenience in buildings, and their passionate worship of everything new and their consequent discarding of everything old, is difficult to say.

The study in question was made through a period of two years by a well-selected and representative committee of realtors throughout the country with a competent staff from the National Association of Real Estate Boards. The method employed was to secure information through 111 local committees of the national association. Upon receiving reports from these local committees their findings were tabulated according to sizes, section location and rate of growth of the cities reporting. Averages were then determined for each classification. The useful life reported for each type of construction under each type of building was tallied for the country as a whole to show the distribution of useful life estimates among the various groups. By this means the term of life in each classification occurring with the greatest frequency could be readily determined. With the complete information given in response to the questionnaires and with these tabulated summaries before it, the Committee prepared its Report.

Practically all types of buildings are included in the Report, office buildings, stores, warehouses, lofts, factories, public garages, theatres, hotels, elevator apartments, flats, dwellings with stores, 2, 3, 4-family dwellings, row-houses, and one-family dwellings.

The Committee found that one-family dwellings may be expected to have a 50-year period of usefulness in every type of construction except frame, where their usefulness was estimated to continue for about 33½ years. Theatres were allowed a 33½-year period.

Warehouses were given a period of usefulness of 55 years; stores and public garages 50 years—varying with different methods of construction; loft buildings a period of 45 to 25 years. The longest period for row-houses was 45 years, and the shortest period, that for the frame row-houses, was 30 years. The useful period for 2, 3, and 4-family dwellings ranged from 42 years to 30 years.

The period of usefulness for permanent construction in the case of apartments and flats without elevators and stores with one or two stories of rooms or apartments was 40 years—the same as for office buildings and factories. When these were constructed of frame the period was reduced to 25 years.

Hotels and elevator apartments were given a comparatively short period of usefulness. For permanent construction that period was 35 years, varying with the type of construction down to as low as 22 years. This is due, not so much to depreciation as to obsolescence caused by changes of fashion and neighborhood.

With regard to the elevator apartment house, the Report says that while elevator apartments may be used beyond the years mentioned in the Report, it is the judgment of the Committee that the use ceases to be profitable considerably before the period assigned. Nowhere does the demand for improved living conditions and the use of the advantages that come from our inventive age catering to convenience and the rising standard of living have a greater effect upon useful life than upon this type of structure.

The National Association of Real Estate Boards has rendered an important public service in making this study. For, it not only furnishes standards upon which obsolescence and depreciation may be reckoned for income tax purposes, but also furnishes standards—we think for the first time in this country on a scientific basis—by which that element of depreciation and obsolescence may be properly viewed in connection with the amortization of buildings—a consideration of very great importance in connection with present day mass-constructed Garden Apartments.

HOW TO KEEP DOWN THE COST OF REPAIRS

“Upkeep is a little brother to overhead,” as John R. McMahon said in his book “Your House”* recently published. “But upkeep is less on a good house than a poor one.”

Describing the advantage of organizing repairs and chores according to season, the author points out that a mid-winter blizzard is no

* *Your House* by John R. McMahon, Minton, Balch & Co.

time to patch a leaking roof, and wisely suggests that many upkeep jobs and a great deal of repair work can be done by home owners themselves who can thus save a great deal of money during the course of a year.

In order to make this easy for the average home owner and to make sure that important items are not overlooked, Mr. McMahon publishes a very interesting "Monthly Calendar of Repairs," outlining the principal things which a home owner should look after in the way of keeping his house in condition each month in the year. This calendar will vary somewhat in different parts of the country, for it is naturally affected by seasonal and climatic conditions.

As illustrative of the kind of thing which should be looked after in a house, not only to ensure good living conditions but to keep it sound and strong and a good investment, we quote the following with regard to the "merry month of May":

Put on screen doors and windows. Open attic windows or ventilators. Clean cellar, whitewash if necessary. Kerosene sprayed on cement floor before sweeping keeps down dust and purifies. Ventilation and cleanliness are not only hygienic measures but they prevent decay and deterioration of the house from cellar beams to rafters. Sanitation balks insects, vermin and mold.

Drain heating plant. If steam, refill with water to safety valve, rake out flues, remove smoke pipe, clean and put aside. For an extra thorough clean-out of boiler sediment get up five pounds steam pressure, then dump the fire without fail and follow by opening outlet drain or faucet at bottom of the boiler. The steam will blow out all dirt along with the water. For hot air plant, take down pipes and clean; patch heater as needed with stove cement.

Do inside painting and varnishing before flies arrive. Also paper or decorate rooms. If bronze or aluminum is applied to radiators the job is better done with a little heat on, but ordinary paint can be used for the radiators.

Put in window panes to replace cracked or broken ones that were temporarily patched during cold weather.

RECENT VACANCY SURVEYS

Real estate boards in 71 typical cities in this country have this year made detailed and thorough-going inventories of real estate in their cities. These inventories show the present percentage of occupancy and vacancy for buildings of various types. The purpose of such surveys is to determine in what types of building the market is now well supplied and in what types of buildings there is—or soon will be—need for a greater supply; and through this information to safeguard the interests of the man expecting to build and the concerns that finance buildings in the cities surveyed, by showing whether the city can use more property of a specific type.

Of the cities in which surveys were made, 29 have a population in excess of 100,000. Construction in these 29 cities for the first 6 months of 1930 totaled \$228,345,309, the National Association points out, in commenting on the amount of capital that is protected through avail-

ability of definite facts on supply and demand for specific types of buildings in these cities.

In Milwaukee—one of the typical cities reporting—the survey determined the following vacancy percentages: Single family homes, 1.8; duplexes, 2.9; apartments, 9.5; stores, 8.2; offices, 13.2, and factories, 6.2. Vacancies found in the city of Buffalo were as follows: single houses, 1.96; two-family houses (by flats), 2.8; apartments, 10.92; offices, 15.77; factories, 9.28, and stores, 10.59.

The National Association of Real Estate Boards after a careful study of these local market surveys reports that in residential structures the cities generally show a normal supply and demand ratio. Nor does the Association find any specific type of property in which overbuilding is widespread.

The Post Office Department at the request of the National Association of Real Estate Boards gave its consent to the cooperation of local postmasters and postmen in making local surveys and in twelve of the 71 cities making surveys this year the boards took advantage of this cooperation from the federal government.

Data through actual counts of vacancies in the various types of buildings included in the surveys was collected by the postmen on their mail delivery trips, forms for this work having been supplied by the real estate board. The filled in forms were turned over to the board for compilation and summarization, after which the information was, in most instances, placed at the disposal of the general public.

About 25% of the cities reporting the findings of their surveys show a vacancy in residential property of 3%, or under 3%. Assuming the low replacement factor of 2% and anticipating a normal increase in population in these communities, there is reason for cities so situated to maintain a normal construction programme in this type of property, the National Association points out.

Cincinnati; Milwaukee; Buffalo; Houston; Wilmington; Oklahoma City; Chester, Pennsylvania; Davenport, Iowa; Hammond, Indiana; Lawrence, Kansas; Lubbock, Texas; Massillon, Ohio; Mineola, Long Island; South Bend, Indiana; White Plains, New York, all report residential vacancy of 3% or less.

THE GREATEST AID TO HOME BUILDING IN THE U. S.

BUILDING AND LOAN ASSOCIATIONS

On the evening of the third of January 1831 several men assembled in an inn in Frankford, Pa. a suburb of Philadelphia. There in a little parlor by the light of an oil lamp was organized a business that today

has assets of more than \$8,000,000,000 and which pays dividends and earnings of more than \$500,000,000 annually.

These honest citizens of Frankford had found it difficult to finance home ownership even back in those days. So they got together and established a fund which they converted into shares of stock on which loans were made each to the other for home building purposes. This first building and loan association was called the Oxford Provident Building Association of Philadelphia County.

The effort was entirely personal and had to do with the individual home building problems of the original members. For this reason the papers of the organization provided that it be terminated in ten years' time—the period worked out then as necessary for completing the payments on home building loans.

But the well meaning citizens of Frankford did not realize that many changes can occur in a dozen years and that it would be necessary to take in new members from time to time to replace those who died, moved away or wished to sell their interests. The new blood brought in towards the end of the ten-year period of course wanted more time with which to repay their loans.

From Pennsylvania the building and loan movement spread into other states rapidly, and the national organization set up in Chicago in 1893 fused together these local and state bodies that all had one common interest—the encouragement of home ownership.

The U. S. Building and Loan League, organized 38 years ago in Chicago, opened a new national headquarters in that city recently as the initial step in an expansion programme which will take at least five years to complete.

This organization which had but a handful of members in 1893 and which now has 1,200 member associations, with assets of more than eight billion dollars, has had headquarters in Cincinnati for more than three decades. The Secretary-Treasurer will remain in that city, but a national office is now located at 59 E. Van Buren Street, Chicago, under the direction of H. Morton Bodfish, lately of the National Association of Real Estate Boards staff, who becomes the first Executive Manager the building and loan group have ever had.

Building and loan associations are organized in nearly all states, under state supervision, for the express purpose of lending funds for home building purposes. Members of the associations consist of two classes: the borrowers who want to finance home ownership and pay in, weekly or monthly, certain stipulated sums and then secure loans from the association for the balance required to complete the home project; and the investors who purchase building association shares.

Called "co-operative banks" in Massachusetts, "homesteads" or "homestead building and loan associations" in New Orleans, and "building, savings and loan associations" in other places, city organizations and state groups of the local bodies all have one purpose—the lending of funds for home building, practically all belong to the national organization—the U. S. League.

SOME FACTS ABOUT SKYSCRAPERS

The average European who has heard so much about New York's skyscrapers, is led to believe that America is a country of skyscrapers and that these manifestations of the present day flourish throughout our entire land.

It will be of interest, therefore, at least to European students of American affairs to learn that in the whole nation there are but 377 skyscrapers or buildings exceeding 20 stories in height and 4,778 such buildings over 10 stories high—of which more than one-half are in the city of New York.

A survey of high buildings was made a few months ago by one of the leading builders of such structures. This survey covered 173 cities throughout the country—all those containing 50,000 population or more. For purposes of this study a skyscraper was defined as one 10 or more stories in height. It was found that there were 4,778 such buildings located in 131 different cities. Of these 131 cities, however, there were 59 that had but 5 buildings of this height, and out of all the cities of 50,000 population there were as many as 42 that had no buildings reaching the height of 10 stories.

Slightly more than one half the total number of skyscrapers in the country 10 stories or more in height, are to be found in New York—2,479 out of a total of 4,778. In 6 cities, there are more than 100 buildings of this height. In addition to New York, Chicago leads with 449, Los Angeles follows with 135, Detroit with 121, Philadelphia with 120, and Boston with its narrow streets with 104.

Thirty-six (36) different cities have one or more buildings over 20 stories in height. Of these New York has 188 such buildings, Chicago has 65, Philadelphia 22. There are 10 buildings in the country over 500 feet in height, and 5 others in course of construction.

The highest existing building at the time this survey was made, was the Woolworth Building, whose 792 feet in height had not been surpassed in 16 years. Since then, however, the Chrysler Building has been completed, which reaches a height of 808 feet above the sidewalk, and the new Bank of Manhattan Building in Wall Street which mounts to a height of 836 feet—all of these to be out-topped by the

new Empire State Building, now nearing completion, which rises to the height of 1100 feet.

From the point of view of the resident New Yorker it is interesting to learn that 50% of the buildings in that city from 10 to 20 stories in height—and 60% of those exceeding 20 stories in height—are located in the mid-town section between 14th and 59th street, far up-town from the financial district on the tip of Manhattan Island.

WILL EUROPE ADOPT THE SKYSCRAPER?

Returning travelers from Europe, especially those interested in skyscrapers, report a turning on the part of many European nations toward this characteristic and original development of America. A representative of the American Institute of Steel Construction returning from a visit to European countries, brings back the message that many of those countries are seriously considering the erection of skyscrapers in their larger cities, and that even London is revising its building code in that direction, that in Paris the rebuilding on the outskirts—presumably on the old fortifications—will more definitely take the shape of the skyscraper.

Another returning traveler, a well-known New York builder, reports that a 15-story office building is now under construction in Madrid, and several buildings as high as 8 and 10 stories in Barcelona, while a 16-story office building is going up in Athens in spite of the opposition of those who thought it might detract from the beauty of the Acropolis. In Antwerp a 15-story building is being built at the present time.

The National Geographic Society recently issued a bulletin calling attention to this trend, pointing out that a building 21 stories high is under construction in Shanghai, a 15-story building in Madrid, a 16-story building in Athens and a 29-story building in Toronto, from which they infer that the American skyscraper is spreading to other parts of the world. A serious controversy was recently started in Melbourne—in which all Australia is reported to have taken sides—over a request to be permitted to build a 40-story building in that city. Melbourne, like Washington, has thus far kept within the 13-story limit. Toronto's new 29-story hotel is said to be the tallest building in the British Empire.

Recent dispatches from Moscow indicate that the skyscraper is finding favor in Soviet Russia. The highest building thus far erected in that city is a 13-story office building opposite the Foreign Office to be occupied by the OGPU—the secret police. Eleven-story buildings for

government offices are being erected in another part of the city, and would have been built to a height of 15 stories were it not for the fact that they are located on marshy land.

It is also reported that serious consideration is being given to meeting the housing shortage by increasing the height of existing multiple dwellings from 3-story to 5 and 6-story buildings, following the example of Paris where 5 and 6-story buildings have been recently increased to 7 and 8-story structures. Owing to the fact that buildings in Russia are built with walls of unusual thickness in order to keep out the cold, their buildings are equipped to take a few extra stories. Moscow's population is now 3,000,000 and is growing all the time, and is said to be a third larger than it was before the War. In addition, hundreds of acres of floor space have been taken over by the government since the capital was moved there from Leningrad, all of which has added to the housing shortage.

That there is much likelihood of the skyscraper finding an entrance into London is greatly to be doubted. Word reaches us from time to time of some new attempt made by some interested person to break down the present height limits—which are set at 80 feet, with discretion in the London County Council to permit building to a height of as much as 100 feet in special cases where circumstances in their opinion warrant it, but this uppermost 20 feet cannot under these circumstances be occupied or used. These efforts to break down existing standards and to open the door for buildings of unlimited height, we are glad to say, seem to be diminishing in recent years with the passing away of a London architect, that city's most persistent advocate of high buildings.

Even with this relatively low limit of height, from the New York point of view, observant Londoners are beginning to realize that buildings are being built to too great a height in view of the width of London's streets, its atmospheric conditions, and its increasing traffic.

Commenting on this situation a short while ago, the *Architects' Journal* had the following to say:

One notices how much less sun enters Regent Street than used to in past times, and one finds with horror that the curiously narrow back streets have become impossible gullies at the base of towering walls of steel, brick and glass. One sees, in fact, that the 80-foot limit is one beyond which it would be unwise to build unless considerations of light and air, traffic and communication are to be entirely left out of account.

The most recent effort to secure a relaxing of the 80-foot standard has led the Royal Institute of British Architects to make certain representations with regard to this subject to the London County Council—the local government body that has control both of the enact-

ment of the by-laws that govern height limitation in London and the enforcement of such by-laws by the building authorities.

A conference was called between the Royal Institute of British Architects, the members of the Town Planning Institute and the London Society—an organization devoted to the welfare of that city.

Some months ago an interim Report was made by this Conference, which sums up in most intelligent fashion the situation as it exists in London and points out the necessity not only of not letting down the bars to a general relaxing of present standards, but, on the contrary, of putting those standards higher and making the erection of high buildings more difficult than they are at present.

The most significant portion of the Conference's Report and recommendations lies in the very definite suggestion that while the present height limits may properly be preserved for those sections of the city which are now developed with a concentrated development, there are vast areas of the city of London which should be treated on a totally different basis, and that the only wise and intelligent way to handle this subject is through zoning the city and regulating the height of buildings on a different basis in different parts of the community.

Their Report has such wide interest not only for England but for America as well that we give it in full.

1. The Conference has had before it a Resolution from the Council of The Royal Institute of British Architects to the effect that no general relaxation should be permitted in the conditions governing the height of buildings in London, also some suggestions put forward by Mr. H. V. Lanchester in a paper read before the International Town Planning Conference in Paris in 1928 (on mass and density of buildings) and other relevant material including regulations that have been adopted in various countries.

2. The Conference entirely agrees with the Resolution of the Council of the R. I. B. A. referred to above but is further of opinion that it is of the utmost importance that steps should be taken immediately to regulate the increase of height and volume of new building that is possible under existing conditions. In arriving at this conclusion, the Conference has been impressed by the fact that:

(a) The present regulations limiting the height of buildings in narrow streets, even when re-inforced by the common law rights of light, are not effective in securing reasonable conditions because building owners, by agreement with the owners of property opposite or by the purchase of their property, are able to build up to the maximum height permitted under the London Building Act on each side of these narrow streets.

(b) Over wide areas surrounding the district known as the City under existing regulations new buildings can be erected which would increase the mass, density and floor area to three or four times those of the buildings at present there, and without provision for any increase in the width of the existing streets.

(c) There is a distinct ratio between street capacity to accommodate vehicular and pedestrian traffic and the floor area of the buildings which those streets serve.

NOTE: It should be borne in mind that the number of motor cars in London is daily growing and any considerable increases will make movement impossible on our existing street system even without any increase in building content.

3. The Conference therefore is of opinion that the height of buildings should be regulated:

(1) By the actual adequacy of light and air to the buildings instead of merely by the private rights without regard to such adequacy;

(2) By the relation between the extent and character of buildings and the adequacy of the streets to carry the resulting traffic.

4. The Conference therefore is of opinion that not only should the London Building Act be amended but that it is essential that a comprehensive zoning scheme and plan should also be prepared and adopted to regulate mass, density and user in connection with the re-building of London. This zoning ordinance should make it clear that building up to the present accepted limit of 80 feet and two stories in the roof will be limited to certain central districts subject to non-interference with reasonable light and air. Outside these districts zones of diminishing height and density should be prescribed and the scheme and plan should include definite provision for:

(a) The regulation of height and floor space of buildings in relation to the width of streets and the amount of light and air required for the class of user.

(b) Historic areas.

(c) The neighbourhood of important buildings (whether ancient or modern) such as St. Paul's Cathedral, Westminster Abbey, the Law Courts, the Houses of Parliament, the London County Hall, etc.

(NOTE: Without such precautions there is grave danger that the scale of public buildings may be rendered insignificant by the erection of high buildings in close proximity to them, while there is also the possible danger to their foundations owing to excavations for deeper basements.)

5. In a city such as London only wide streets and big lots can carry buildings from 80 to 100 feet high, but if a comprehensive zoning scheme were prepared, the Conference would see no serious objection to permission being granted, under certain well-defined conditions, for part of the occupied portion of a new building to exceed the statutory limit of height zoned for any particular district, provided always that:

(a) No increase in total volume and floor space over and above that zoned for the area is thereby obtained;

(b) Effective protection from fire is assured;

(c) Adequate protection is given to the rights of surrounding owners to their fair share of light and air;

(d) A reasonable uniform cornice level is maintained in certain classes of streets.

The Conference believes that by the adoption of such a policy more latitude could be given to designers within ultimate limits with a resultant gain in the quality of the buildings erected in the various districts. In connection with subsection (c) above the Conference would draw special attention to the fact that in these latitudes the maximum angle of the sun in winter is only 15 degrees. An angle of 45 degrees thus cuts off the light of the sun for a period of six months.

The Conference suggests that the volume and floor space of new buildings would probably be best regulated in proportion to the length of frontage enjoyed rather than by the depth of the site; also that the erection of high buildings on small lots in narrow streets should be forbidden pending the preparation of a development plan for the whole area.

6. While the Conference does not criticize detail variations of the height regulations which are intended to meet difficulties due to special circumstances (provided that they do not involve any increase in the total volume or general bulk of the buildings concerned) it is definitely of opinion that the mere fact that a new building faces a large existing open space such as a park, square or river, in no way justifies any special increase in height. Such increase gives to the owners adjacent to the open space an additional value to which they have no special claim and enables them to deprive owners behind of their fair share of benefit.

On the contrary, the existence of an open space, the benefit of which over low frontage buildings has long been enjoyed by neighbouring owners lying behind or adjacent, would seem to constitute a valid reason for specially limiting the increase of height which may be permitted on the sites fronting the said open space.

7. The Conference is further of opinion that a definite scale should be laid down to govern the width of streets having regard to the use of the neighbourhoods they serve. If any material enlargement of floor space over and above that existing or planned for a district is proposed, then the proposer should be required to provide or contribute to the provision of equivalent space to cope with the additional traffic which is likely to be engendered and to prevent any diminution in the amount of natural light and air available.

This Report presented officially to the London County Council, in the opinion of competent observers has already stopped the proposal for a moderate increase of height that was made to that body about a year ago—a proposal that has recently been withdrawn.

THE HOUSEWIFE COMES INTO HER OWN

THE PRACTICAL-SCIENTIFIC KITCHEN

What promises to be the greatest step that has been taken in recent years in restoring the home to its rightful place in the community, is the work undertaken by a great metropolitan New York newspaper, the *Herald-Tribune*, under the leadership of the Editor of its Sunday magazine, Mrs. William B. Meloney, who was largely responsible for President Hoover's establishing a few years ago the "Better Homes in America movement." Under Mrs. Meloney's guidance, and with splendid support from her associates in the *Herald-Tribune*, that journal's Institute for Women has been expanded so as to develop a really scientific and yet practical and commonsense treatment of that domestic drudge in the household—the ordinary kitchen.

Announcing the results of the patient research work that has been done by efficiency engineers and other experts in the field of domestic science, Mrs. Meloney in an article in her own columns a few months ago announcing the establishment of this new Institute and Model Kitchen has the following to say as to the importance of the kitchen to the ordinary home:

A banker of international importance said recently: "All other business depends upon that larger business—the keeping of the house. All other industries are in some way incidental to the industry of running the home. Ships, shops, factories may all be translated into lamb chops, spring styles and small homes."

If I could accomplish but one thing in my life I should choose to glorify in some measure the common tasks. It is by common tasks that men live. Only by the intelligent and happy doing of these humbler jobs may the acid test of civilization, the happy and successful family life, be achieved.

In the great majority of American homes the wife and mother performs these unsung daily labors. The running of her house is one of the greatest engineering projects in the world, yet we frequently hear the home-maker say to women who have professions outside the home, "Isn't what you are doing interesting! I am only a house-keeper."

The American business man first turned his mind toward efficiency in industry. He set out to perfect lighting, heating, space, working levels and a thousand and one details which make for the last word in economy and safety, prevention of waste and higher earning in industry. Millions of dollars were spent to eliminate unnecessary motions, to protect workmen from injury and loss, to shorten their work days and lengthen their pay.

All this was for the average man.

Meanwhile the average woman went on using her grandmother's tools, after walking five miles a day just in her job of feeding the family and cleaning the house.

HOMEMAKING THE GREATEST BUSINESS

Then, shortly after the war, a new sun came up over the brim of the world, and woman's day was born. The mechanical genius which had concentrated almost exclusively on factories now turned its attention to the home. The small group of pioneer workers in home economics who had been crying in the wilderness for a generation were given a hearing. Men began to realize that homemaking was the greatest business in the world and that the wants and needs of the American housewife must be considered. An important factor in bringing about this revolution of thought was the widening of woman's education and her interests outside the home, so that she no longer had time to put up with the old-fashioned methods of homemaking.

After months of research by Dr. Lillian Gilbreth, efficiency engineer, with advice from leaders of national reputation in various branches of the field of domestic science, a kitchen was developed with the idea of saving the lost motions and waste labor that characterize most of the kitchens in America today. Engineering science, careful planning and decorative skill have thus been brought together to produce a model kitchen for an average family—not a kitchen for the ordinary servant girl to run, but for the home maker herself.

Here in the Herald Tribune building has been established a home laboratory which takes the drudgery out of house-hold tasks and gives the home maker that dignity and joy in her responsibilities, which rightfully belong to the most important profession in the world.

As its sponsors point out, this model kitchen is not offered as a rigid model for all kitchens, as one of the first rules for the efficiency of any plan is that it must be adaptable, and those responsible for this work believe that every kitchen should be individually arranged to suit the height, the taste in decoration, the working habits and the pocketbook limitations of the woman destined to be its mistress.

TWO BASIC PRINCIPLES OF KITCHEN DESIGN

In its design the Herald Tribune kitchen has, however, demonstrated two basic labor saving principles which can be followed in the laying out of any work place. These principles are:

1. Working surfaces adapted to fit the height of the worker.
2. The circular workspace.

No woman who has labored for even five minutes in an inefficient kitchen needs to be told that the most exhausting part of dishwashing, ironing and any other task usually done standing, is the constant bending over. It is a tragedy and a reproach that for hundreds of years feminine backs have ached so unnecessarily. Even today the evil is far from cured, for not all women have learned that there are ways in which kitchen equipment may be adjusted to individual heights. As the result of the work of women like Dr. Gilbreth, all up-to-date kitchen equipment will probably in time be made with easily adjustable legs, but until that time comes there are various expedients by which the housewife may meet the difficulty.

WORKING SURFACES ADJUSTED TO THE WORKER'S HEIGHT

The Institute kitchen was planned for a housekeeper 5 feet 7 inches high, since that is the height of the food expert on the Magazine staff. The desirable work level for her was found to be 36 inches, which was the distance from the floor to the tips of her fingers when she was standing with shoulders relaxed and elbows bent in a normal and comfortable working position. This meant that the stove, the rim of the sink, the work surface of the cabinet and the tables had to be 36 inches from the floor. The height of the work stool also had to be adjusted so that when the housewife is sitting her hands are in the same relative position with regard to the equipment as when she is standing.

Most manufacturers make cabinets and table tops approximately 31 inches high. This means that for the taller woman they must be raised. This can be done by means of castors, rubber-tired wheels, castor cups or more drastic measures. The legs of the Institute's stove are placed on wooden blocks; the cabinet has a built-in baseboard; the work tables are on wheels; the sink is supported by a wooden cupboard. For the very small woman these processes may be reversed, as it is possible with most equipment to saw off enough of the legs to bring them to the right height. If the sink is too high for a very short woman she should have a small wooden platform built in front of it, on which she could stand while washing dishes or pots and pans.

NO LOST MOTIONS

Dr. Gilbreth's second efficiency principle: that of circular routing is based on a long and careful study of kitchen processes and experiments with many kinds of kitchen arrangements to find out which plan would eliminate all the unnecessary motions. The arrangement in the Institute kitchen has been given a practical test by which it was proved that this plan had cut almost in half the number of motions required in preparing any given dish, and had reduced to less than one-sixth the amount of walking required.

The Institute is not opposed to walking and exercise for the woman of the family—far from it! But we do maintain that she should take that exercise in the open air. The number of kitchen operations had been cut from 97 to 64. The number of actual steps taken had been reduced from 281 to 45—less than one-sixth!

This great gain in kitchen efficiency is based on the idea of grouping together within easy reaching distance, furniture and equipment which are used in the same processes or in processes which immediately follow each other. In meal preparation, for example, the housekeeper starts to assemble her cooking utensils at the cabinet and cupboard. Then she assembles the foods from the refrigerator and cabinet, prepares them at the cabinet or sink, and places them in or on the range. It follows that if an arrangement can be made which will put her within easy distance of refrigerator, cabinet, sink and stove, her tasks will be greatly simplified.

When a meal is being prepared the work table on rubber-tired wheels is wheeled over to the work center and stands there.

The housekeeper stands or sits on a high stool in the position indicated by footprints on the floor. From there she can reach her stove, her staple foods in the cabinet, her perishable foods in the refrigerator and her work table. A few short steps take her to the sink. On the built-in shelves at each side of the stove she keeps utensils needed for the stove—on the left, pots and pans for boiling and frying; on the right, dishes for baking and extra bowls used to supplement those in the cabinet. The cupboards under the sink conceal a vegetable bin, (placing vegetables close to where they would naturally be cleaned) a garbage container (close to the electric dishwasher which is a part of the sink) and the various cleansers and implements used for cleaning the sink. In this cupboard two little drawers hold vegetable knives and brushes.

THE UNIQUE DOOR CLOSET

A unique feature of the Institute kitchen is the door closet to hold cleaning equipment used in the kitchen. This is a Herald Tribune Institute invention, made especially for the model kitchen, but answers such a long felt need that it is already destined to a wide popularity. It is a curved metal pocket fastened to the door with hinges and opening to reveal a compartment for these necessary but undecorative objects. It has places for floor mop, broom, brushes, ammonia and dusters. The outside is painted the color of the door, but the inside is enameled black. When closed the door closet extends only six inches beyond the door to which it is attached.

The housekeeper's planning desk is another crowning achievement in efficiency. It is Dr. Gilbreth's belief that the business of running a house demands a well planned little "office" just as surely as does any business run by a man. It is a place to make up menus, to telephone market orders and to pay bills. It is 12 inches deep by 26 inches wide. The front drops to reveal a telephone and two small drawers, one for paid, one for unpaid bills. The top shelf holds recipe books and the Herald Tribune box of tested recipes.

RADIO HAS ITS PLACE IN THE KITCHEN

On the second shelf is the radio, with the loud speaker built in above. The Institute feels that the radio has a definite place in the modern kitchen, contributing not only to the happiness of the housekeeper but to her efficiency, since it enables her, without leaving her work, to listen in on much of the useful and interesting information about her job which is now being broadcast, and glorifies many of the common tasks of the kitchen by a musical accompaniment. It has long been realized that marching soldiers forget their fatigue when the band is playing. Indeed, much of our music and even our speech has evolved from the rhythmic sounds of laboring men working in unison, and the arm that beats a cake does so with less realization that it is work if the movements are timed to the beat of a waltz.

The Institute also believes that the telephone is a necessary adjunct to efficient homemaking. Personal marketing should be done twice a week, but the telephoned grocery order can never be entirely dispensed with.

DESK AND TELEPHONE

The final convenient feature of the planning desk is its bottom drawer, in which is kept a small tool kit containing screws, nails, hammer, screwdriver and other implements necessary for quick repair work.

To the right of the planning desk is a drop-leaf table and four gaily painted chairs, where the family of four, for whom the kitchen was planned, may breakfast, or where the children may eat lunch while mother goes on with her work. If the architecture of the kitchen allows, this may be replaced by a breakfast nook with built-in table and benches.

The outside door is in this arrangement at the end of the room exactly opposite the stove. To one side of it a hanging cupboard holds the big serving dishes and everything necessary for breakfast. Under the cupboard stands another work table on wheels, its black composition top—which is impervious to burns, to the alcohol in flavoring extracts or to other stains—ready to hold the serving dishes while they are transported to the stove and then into the dining room.

No mere description of this remarkable development can do it justice. Every woman who is interested in the home who lives in New York or comes to New York should take an early opportunity of visiting this demonstration kitchen established on the 9th floor of the Herald Tribune Building, 230 West 41st Street. It is open to visitors every day, except Sundays, from 1 to 5 P. M.

A 12-page illustrated pamphlet describing the new kitchen can be had upon application to the Herald Tribune Institute. This pamphlet not only describes the kitchen in detail, but has appended to it a budget of the kitchen showing the cost of every item that has gone into it, classified under such groups as electric equipment, cooking utensils, china bowls, wire goods, etc.

THE KITCHEN PRACTICAL AND GAS

The three electric kitchens which have been developed by Mrs. Meloney and Dr. Gilbreth are not the only developments in this field. Recently Dr. Gilbreth has performed a similar service in co-operation with Miss Mary E. Dillon, the very efficient President of the Brooklyn Borough Gas Company, in New York City. With the same purposes in view and the same methods of saving lost motions and unnecessary steps, with scientific consideration of the height of working places and the circular work-place idea, "a Kitchen Practical" has been developed that is being placed at the service of the housewives of Brooklyn and the territory which the Brooklyn Borough Gas Company serves. A very effective exhibit of this kitchen is to be seen at all times in the offices of the Brooklyn Gas Company at 17th Street and Mermaid Avenue, Coney Island, and a duplicate of this exhibit has been recently sent to Berlin where it is expected to prove one of the

leading features of the Housing exhibits from the United States at the International Housing and Town Planning Exhibition which opens early in May.

We agree with Mrs. Meloney when she says: "The family that is happy, the husband who is successful, inevitably have back of them a woman who not with humility but with great pride should write herself down as 'home maker.' "

It is this woman to whom the Herald Tribune Institute is dedicated.

GERMAN WOMEN THINKING OF SCIENTIFIC KITCHENS

That interest in the scientific kitchen with its labor-saving devices and scheme of organization is not confined to America, is evidenced by an instructive and interesting article to be found in the journal, *Housing and Building*, published at Frankfort. A recent issue was devoted largely to "Dwellings and Women," and contained two articles that would have interest for our readers.

One of these, written by Dr. Marie Elizabeth Lüders, a member of the Reichstag, is entitled "Easy Management of the House as the First Consideration for the Builder." This is followed by an article by a woman architect of Frankfort, Grete Schütte-Lihotsky, in which the writer points out the importance of "rationalizing the work of the housewife", stating that every intelligent woman feels that housekeeping as hitherto known is entirely out of date, and a serious hindrance to one's own development and consequently to that of the children. She then goes on to point out that most houses are so designed that the kitchens seldom fulfill their purposes and result in a great waste of labor.

While apparently no one in Germany has given to the subject the same scientific research that characterizes the Herald Tribune or the Brooklyn Borough Gas Co.'s Model Kitchen, it is evident that there is a stirring of interest in this subject in other countries and a realization that the time has come when the home maker should be more considered in the design of the home.

NO MORE "TOM THUMB" KITCHENS

The worm has finally turned. No longer can builders of one- and two-room apartments in New York City put their tenants off with tiny holes in the wall which they have had the effrontery to designate as kitchens. According to a writer in the *New York Sun*, the most un-domestic looking tenants, searching for one-room and two-room apartments generally want a comfortable kitchen with it and not the interior closet kitchenette with its sink, couple of shelves and toy icebox that

builders were putting into the smaller units until recently. Instead of this, they want a real kitchen with a stove and closets and with a window admitting light and air.

New York City real estate men have found this year, for the first time in many years, that it pays to give tenants real kitchens, comfortable in size and equipped with a real window. Even Greenwich Village, that "arty" part of the city, the home of Bohemia, the last place in which one would expect to find domesticity, has begun to demand proper kitchens.

According to one prominent New York builder one of the first things a tenant looks at is the kitchen. He adds that he does not believe a builder can spend his money in any better place in an apartment than in the kitchen. A tenant will pay enough rental to justify the extra cost of a comfortable outside kitchen if it is well planned. But it must be a real kitchen, and not less than 6 x 8 feet in size, preferably 8 x 8 feet, with a good sized window and scientifically planned cabinet units. Such a kitchen should be provided for every apartment, regardless of the number of rooms it contains—even the one-room apartment should have it.

One of the architects of New York who builds apartments and apartment hotels, especially the modern small apartment, states that nearly all the plans that they have in their office to-day provide kitchens with windows—even in apartments of one and two rooms.

It is not without interest to learn that the Herald Tribune Institute, following the great success of its Model full-sized kitchen has now developed two kitchenettes suitable for the small spaces that are available in the highly concentrated places of living that flourish to such extent in New York City. These have been developed upon such compact and yet such scientific and convenient lines, that leading operators in this class of realty are embodying them in their latest buildings.

"KITCHENETIQUETTE"

What the "Tom Thumb" apartment and the methods of living that go with it have brought about in destroying the niceties of social relations between people is most amusingly set forth in an article in the *New York Herald Tribune* by Weare Holbrook.

After pointing out that the ordinary books of social etiquette have little application to the dweller in these restricted spaces, he describes what happens to the guest upon arrival in the ordinary kitchenette apartment as follows:

When you have found your friends' apartment knock on the door. If at the end of fifteen minutes there has been no response it will mean (a) that your friends are not at home, or (b) that you have used the same knock as the collector from the Play-as-You-Pay Radio Shoppe.

Should you enter the apartment without knocking be sure to have some appropriate greeting ready beforehand; otherwise you may find yourself at a loss for words. Statistics show that a person who opens the door of a two-room apartment unexpectedly runs a fifty-fifty chance of embarrassment; in a three-room apartment the odds are one to three—and it is advisable to stay out of one-room apartments entirely until the door is opened from the inside.

Upon entering and discovering that you have arrived too soon, withdraw quietly to a far corner of the least occupied room and study the Maxfield Parrish prints on the wall. Under no circumstances is it correct to say, "Allow me to hand you a towel", or "I'd wear the pink slip if I were you". A guest should be helpful, but not *too* helpful.

THE DINNER

According to the old-fashioned etiquette books, the hostess should enter the dining room upon the arm of the principal guest. But in a kitchenette apartment this is *de trop*; instead of entering the dining room the guest remains seated while the dining room surrounds him slowly. The daybed is moved into the corner, the cactus plant transferred to the window-sill, the gate-legged table extended and covered with a cloth.

As dinner is being prepared it is customary for the guest to say, "Isn't there something I can do?" Do not repeat this question too often, however, or your hostess may hang an apron around your neck and set you to mashing the potatoes. Worse yet, she may give you a can of boned chicken to open—one of those burglar-proof cans that open on the bias with a key.

The advantage of the kitchenette dinner is that you know what you are getting; everything is open and aboveboard—except possible the can of boned chicken. When your hostess rescues a charred fragment of meat from the broiler and says, "Do you prefer your steak rare or well done?"—you are able to reply tactfully, "Oh, well done, by all means!" (Your hostess, by the way, will remember this and serve you charcoal briquettes instead of filet mignon forever after.)

SERVING THE DINNER

The fact that you have seen the meal in all stages of preparation does not mean that there will be no surprises when you sit down to the table. A kitchenette dinner always has the charm of the unexpected. If your host is not jumping up to extract ice cubes from the electric refrigerator, your hostess is flitting away to take a peak at the pudding or the percolator. As the guest of honor, you are seated in the main thoroughfare and are kept busy shoving aside your chair, searching on the floor for your napkin and muttering, "Oh, not at all!"

Sooner or later one of two things happens: your cuff link catches in the lace tablecloth (which belonged to the bride's mother) or you kick one of the twenty-seven legs of the gate-legged table. In either case, the results are the same; you get a lap lunch and find yourself

suddenly garnished with groceries, like the *piece de resistance* of a Blue Plate Special.

AFTER DINNER

Before prohibition, gentlemen remained seated about the dinner table for fifteen or twenty minutes while the ladies retired to the drawing room. This afforded an opportunity for the ladies to restore their make-up, and the gentlemen to make up their restoratives.

Now it is more customary for all to linger around the table—each person waiting for some one else to volunteer to wash the dishes. At the end of half an hour, if no one has made a move toward the sink, the hostess will suggest a game of bridge. In order to play bridge it is necessary to clear the debris off the table. One thing leads to another—and, before you know it, you have a dish towel in your hand and are looking for a place to set the wedding presents.

“Thoroughness before speed” should be your motto when wiping dishes. With the aid of diverting conversation a guest can sometimes spend an entire evening wiping one cut-glass salad bowl.

Your leave-taking should not be delayed too long, for dwellers in kitchenette apartments generally retire early, and they cannot do so while you are there, because you are sitting on the bed. You may not believe it is a bed. But it is. In the modern home a bed can be disguised so skillfully that you would never suspect it, even if you tried to sleep on it.

So it is well to start hunting for your hat about 11 o'clock. You will find it in the two-dimensional closet in the hall, wedged between a vacuum cleaner and an ironing board. As you leave do not fail to tell your hostess what kind of time you have had.

A NEW STATE HOUSING MOVEMENT

IN MASSACHUSETTS

Some five years ago George E. Henry, a citizen of Winchester, Massachusetts, who had been interested in many phases of social work, left a fund to be used for the improvement of housing conditions. The trustees of this fund incorporated the Massachusetts Housing Association and in January, 1931, invited John Ihlder to draft a programme for their consideration.

This programme was presented and approved at the annual meeting of the incorporators on March 17. It recognizes the unique opportunity given to a state organization that does not need to appeal for funds to a state wide constituency. The programme proposes that the Massachusetts Housing Association shall initiate housing work in Massachusetts' municipalities, beginning with Metropolitan Boston, carry on that work so long as necessary, and then withdraw from responsibility for local work in favor of a local association.

The field of the Massachusetts Housing Association is that covered by the tested phrase, of seeking to improve housing conditions in every

practicable way. Its primary concern is, of course, that of improving the conditions of the poorest elements in the population, but it recognizes that there is no clear line of demarkation between economic groups, that the housing of the well-to-do tends to become the housing of the poor.

Consequently it is interested in law and law-enforcement, in encouraging the reconditioning or improvement of existing dwellings, and in securing better standards for dwellings hereafter erected. It wishes to co-operate with other social agencies that are concerned with housing and to aid in stimulating the erection of improved dwellings.

The Directors are Charles F. Dutch, president, C. Freeman Olsen, treasurer, Stoughton Bell, Albert M. Chandler, Mrs. George E. Henry, John M. Kingman and Mrs. Eva Whiting White. John Ihlder is executive director, dividing his time between Boston and Pittsburgh.

NEW YORK'S NEW HOUSING MOVEMENT GETS STARTED

On January 1 the Housing Association of the City of New York opened offices in the new County Trust Building, at 80 Eighth Avenue, with Edward T. Devine as Executive Director.

This Association, which was organized last June, has a strong list of officers and directors. It is attacking the herculean job of improving the housing conditions of the lower-income groups of New York City with confidence that they can be appreciably improved, notwithstanding the many and obvious obstacles in the way, and with the intention of sparing no effort to overcome the obstacles.

Alfred E. Smith is president of the Association, Howard S. Cullman is treasurer, and Stanley M. Isaacs is chairman of the executive committee. Others among the officers and directors are: Felix Adler, R. Fulton Cutting, Alexander M. Bing, Frederic A. Delano, Ruth Pratt, Mary K. Simkhovitch, Harold S. Bittenheim, Sarah Schuyler Butler, Clarence Hoyt Holmes, Rosalie Manning, H. H. Murdock, Thomas Adams, Henry Bruère, Darwin R. James, Orrin C. Lester, Edith Elmer Wood, Clarence S. Stein, I. N. Phelps Stokes, Leo Wolman, and George McAneny.

The work of the Association is viewed as falling in three main departments: research, legislation, and the promotion of specific housing projects. This last department will naturally be the province of the finance committee. The research department is in charge of a committee of which Dr. Leo Wolman, director of research for the Amalgamated Clothing Workers of America, is chairman. Sarah Schuyler Butler, vice-chairman of the Republican State Committee, is chairman of the legislation department and of the committee on

legislative policies within that department. Within each of these departments there will be committees, both standing and temporary, charged with special inquiries or subjects. One such committee which has already been set up in the research department is the committee on health and housing, of which Dr. Adrian Van S. Lambert is chairman. Under the auspices of this committee a meeting was recently held at the Academy of Medicine to interest in the work of the Association the medical profession and others primarily concerned with problems of health.

From the offices of the Association, high above Eighth Avenue and Fourteenth Street, most of the architectural marvels of the city are visible to the south, east, and north. Below its windows, in dramatic contrast, is a patch-work of roofs illustrating the types of housing that make up the living accommodations for the population of the city: old-law "railroad" and "dumb-bell" tenements, all grades of new-law tenements and apartment houses, and numerous houses originally built as private dwellings which have been converted into apartments.

UNEMPLOYMENT HITS HOUSING

The effect of the business depression has been to slow up substantially the progress being made in Cincinnati in improving housing conditions. Many owners because of the amounts lost in unpaid and delayed rentals are reluctant to make the repairs to their properties that are needed. In addition there has been a strong tendency for unemployed families to move to cheaper and smaller quarters and in many cases to double up in order to save rent.

The Better Housing League is working with the city housing bureau to offset as far as possible the adverse effects of this situation. Appeals have been made to property owners to permit tenants to do repairs on buildings in order that they may be able to work out the rent. Owners have also been urged not to let their properties disintegrate at this time, because of the increased cost that it means to them at the end of the depression.

Another scheme suggested by a Board member of the League is now being carried out by which unemployed men are being used to repair houses owned by impoverished owners. These houses are carefully selected by the Better Housing League. The owner is required to furnish the material, which the League buys at the lowest cost, and the unemployed men are paid out of a fund raised by special contributions for this purpose.

BLEECKER MARQUETTE
Cincinnati

HOUSING IN DENVER

The Denver City Club has made another addition to its list of fact-finding studies of the cultural assets and civic problems of its city. This latest report deals with housing conditions as found in 5 selected areas.

The facts presented show that conditions are much the same as reported by investigators in other American cities. There is the refuse area where families live in houses built of material salvaged from the city dumps and have neither the service of sewers nor of the city water supply. "Jungle land", called "Shanty Town" in many cities, also has a plethora of shacks, and while served by city water, they are for the most part unsewered. Here facilities for supervised recreation are lacking and the families are even neglected by "uplift" agencies.

The other three areas are conspicuous because they are in the throes of transition. In one, the dwellings are being converted into rooming, lodging and tenement houses—with all the evils of such conversions. In another, industrial encroachments are rapidly reducing the amount of housing accommodations available, and at the same time are discouraging the maintenance of properties that still house families.

The fifth section studied is deteriorating from business to a "flop house" district—the haunt of homeless men. These districts surveyed are not the total of Denver's bad housing. Elsewhere in the city are other houses substandard in type and equipment and subject to severe criticism for insanitation and disrepair. The whole housing situation is made more serious because of the winter influx of from 5,000 to 8,000 Mexicans of a low mental and moral calibre whose habits of living tend to accentuate the bad buildings they occupy.

The Denver Report briefly outlines some major difficulties in the way of housing betterment that arise from the ignorance of certain classes of tenants, the greed of some house owners, and the indifference of the general public both to the prevalence of bad housing and to the serious health and moral consequences arising therefrom. Several practical remedial measures are recommended, not the least of which is the creation of an adequately financed Housing Commission to be charged with the task of eliminating housing evils and promoting a broad programme for permanent housing betterment.

BERNARD J. NEWMAN
Philadelphia

MAKING UNEMPLOYMENT HELP HOUSING

The Philadelphia Housing Association acting as liaison between the Unemployment Relief Committee and the Division of Housing and Sanitation of the city government has been instrumental in finding work for more than 750 men with the Division in doing clean-up jobs in yards, courts, alleys, vacant lots, and cellars of vacant properties. These men—whose salaries are paid by the Unemployment Relief Committee—are being used in special crews throughout the central congested area, with one or two crews floating around in other areas. They are removing waste and refuse of long accumulation. The Division of Housing and Sanitation reports that from some vacant six-room houses they often take as much as a truck load of debris.

The Housing Association is thus accomplishing a two-fold purpose; for, not only is the Unemployment Relief Committee supplied with bona fide made-work, but the city is experiencing an improvement in sanitary conditions almost overnight that would have taken nearly five years to accomplish with the usual staff of city employees. The association's Chief Sanitary Inspector states that he has never seen certain notorious courts and alleys as clean as they are today.

The association is rendering further service in connection with the Made-Work Committee by providing work, under its own direction, for thirty-seven men in field surveys, tabulation, and special drafting.

BERNARD J. NEWMAN
Philadelphia

BLIGHTED DISTRICTS AND HOUSING

IN PHILADELPHIA*

Blighted districts present one of the greatest wastes in modern cities and at the same time are an outstanding source of housing evils. In some cases the blighting of city areas is due to the construction of buildings without regard to the necessity of complying with decent standards of construction. This is illustrated by what is happening in the East Side in New York—one of the most amazing episodes in America's housing. Families by the thousands have left these abominable old law tenement houses where adequate light and ventila-

* *Report of Philadelphia Housing Association for 1929, 48 pp., 1600 Walnut Street, Philadelphia.*

tion and sanitary living are made an impossibility by stupid planning. Owners of these buildings left "holding the bag" stand aghast and bewildered at what has happened. Ways and means of reclaiming the abandoned parts of the district constitute a problem that will demand all of the ingenuity that can be applied to it.

Philadelphia has a large blighted district, which is both the result of bad planning in the past and of shifting uses. A considerable portion of the recent Report issued by the Philadelphia Housing Association deals with this old area of Philadelphia which was formerly the city of Penn. The population of this district in 1860 was 137,000 and today is less than one-half of that number. Commercial and industrial establishments have come into the area in large numbers. The Report bemoans the lack of a plan to guide the development of these districts so that the new business and industrial areas now being created will not shift again within a short time causing tremendous losses in value. It points to the importance of assuring the permanency of light and ventilation, easy access and expeditious traffic flow to prevent business being eventually forced to other locations.

The Association at the request of the Mayor's committee on Child Life and Protection submitted a report on the conditions and hazards of certain residential portions of the blighted district. They find a considerable portion of the blocks subdivided by minor streets from 8 to 20 feet wide including a number of court and alley properties. They find also a general trend toward depreciation—except in some sections where strenuous efforts are being made to resist it.

No other city in the United States, says the Report, contains so large an area of back yard, alley and court houses. The large percentage of families living in houses inadequately equipped for hygienic occupancy is notable. In one area Bernard J. Newman, the author of the Report, states 35% of the dwellings lack street frontage; 76% have no baths; 71% only outdoor toilets; 11% no inside sinks. Many structures of all types are being demolished in the area. Many families are rehoused in other dwellings in the district resulting in congested occupancy.

The deterioration of the buildings due to age and poor maintenance adds to the decadence of the district. The general rundown condition places a heavy burden of sanitary inspection upon the city. Despite the fact that the street layout is faulty, the construction of new buildings intensifies the planning evils and postpones the final solution by replanning the district. Existing open spaces are thoroughly inadequate.

IT MEANS A LOSS TO THE CITY

Not only the owners of the properties but the city faces definite social and economic loss from this situation as shown in the decrease in assessment values. The lack of proper street plan and adequate street widths cause a waste in street cleaning and maintenance. The high sickness and absentee rate of workers limits their buying power and industrial efficiency. Street accidents and fatalities are high and the traffic delays excessive and costly to individuals.

The Report summarizes the many needs that should be taken into consideration in replanning the area. It presents a table showing the economic advantage of intelligent replanning of such areas as illustrated by projects in 8 of the large cities in the country.

An interesting study then follows of minor streets and alley houses showing that the structural condition of the houses seems to vary with the width of the street. Those on streets 20 feet or more in width were for the most part classed as "fair", those on streets less than twenty feet in width "sub-normal", and those without street frontage "poor". It is interesting to note that a large percentage of the properties were considered undesirable by tenants, as evidenced by the very high vacancy rate of 24%. Mr. Newman recommends that some socially minded group of Philadelphians assemble a substantial number of the houses having street frontage, and which are now held by speculative owners, and undertake to modernize and renovate these houses. He believes that this could be done with a fair return on the investment.

NEW DWELLINGS

The usual interesting and detailed study is presented of dwelling construction. This is illustrated by several charts showing the ratio of dwellings built to the total amount of construction of all types, for the years 1925 to 1929 inclusive—indicating a substantial decrease in the percentage of dwellings year by year. This confirms data from other parts of the country proving that the decrease in dwelling construction did not follow but preceeded the stock market crash. The number of houses for which permits were issued in 1929 was only 53% of 1928 and 32% of 1925, which was the peak year of building. While this falling off was quite general throughout the country, during the same years there was a greater decline in Philadelphia than in most cities.

This study of new construction in Philadelphia reveals several facts of unusual interest. It seems to indicate that wooden frame con-

struction is gradually disappearing in that city. In the year 1929 only 18 frame houses were planned, less than one-half of 1% of the total houses under permit. The average cost of 1-family dwellings for which permits were issued in 1929 was \$4,459 and the average sales price \$6,339. The sales were more frequent in the lower price ranges. Fifty-two (52) % of the houses priced from \$6,000 to \$7,000 were sold; 34% of those priced at from \$7,000 to \$8,000; and 25% of those priced at from \$8,000 to \$9,000. There has been a steady decline in the selling price of 1-family houses during the past 7 years. Whereas the estimated construction cost per dwelling in 1923 was \$5,390, in 1929 it was \$4,018; and the sales prices dropped accordingly. The percentage of total construction in the lower price ranges has increased. In 1929 approximately 79% of the houses built were priced at \$7,000 or under, as compared with 45% in 1923.

During 1929 the number of sheriff's writs issued reached the peak for the 10-year period and real estate sales declined. Mr. Newman's prediction is probably correct that the year 1930 will show a new low record for the decade in dwelling construction. It is an interesting fact that the number of sheriff's writs has increased in Philadelphia year by year since 1920. In that year the number was 737 and in 1929 it reached the high total of 11,918.

SOME CONCLUSIONS

The Philadelphia Report presents a number of important conclusions with which most observers will agree. The confidence of the public in the securing of dwellings and mortgages for investment purposes has been undermined. Until that confidence is restored the return to normal sales will be delayed. There is a large supply of reasonably priced high grade houses. There is an outstanding need in the construction field for an adequately financed statistical service to assemble and interpret data pertaining to construction, sales, buying-power, population trends, cost reducing methods and like information to put dwelling construction and sales on a more reliable basis.

Mr. Newman notes a tendency toward stabilization of rents at present rates. The decrease in gross rents of all dwellings studied was 3.9% in 1929 as against 4.9% in 1928. He concludes that there will be little, if any, further recession in rental rates. In the light of the fact that 1930 was an infinitely worse year from the point of view of economic depression than 1929, and from first-hand observation there is good reason for questioning Mr. Newman's conclusions on this point. It would seem probable that an audit of the facts would show that rents

declined more in 1930 than previously and that a still further decrease may be expected, in line with the general decline in living costs.

The final chapter of the Report deals with the Association's educational work—consisting of housing exhibits, housing trips, special exhibits, lectures, newspaper and magazine publicity.

Philadelphia is, indeed, fortunate in having a live Housing Association, intelligently directed, endeavoring to safeguard the housing of the masses of people in that city.

BLEECKER MARQUETTE
Cincinnati

BROOKLYN GARDEN APARTMENTS A SUCCESS

The first apartments designed and built by Brooklyn Garden Apartments to demonstrate the housing law were opened August 1, 1929. For the first 6 months 4% was paid out of earnings. The second semi-annual payment was 5%. On March 10, the third dividend of 6% was paid by the company. It is gratifying that we were able to increase the rate to the limit permitted by charter. The books show that the dividends were earned with a reasonable margin, after payment of mortgage instalments and other reserves, in spite of the fact that the investment in the Adelphi-Carlton buildings had been finished and productive for but two months of the last fiscal year.

The next financial goal of the company is gradual accumulation of sufficient surplus to pay off accumulated dividends equal to 6% on stockholders' money for all the time we have had its use.

The houses are full and collections have been remarkable, partly because the company's financial policy is to charge as little as possible and still assure 6% net earnings. The rents have been voluntarily reduced below the legal rate of \$11 average per room per month, by a sum which would have netted 1% extra on the capital stock. So in effect there has been a dividend to the renter equal to the increase paid to the owners.

These houses are not the finest that the promoters could think of. On the contrary, the directors met what they believed to be their obligation to their fellow stockholders and their partners—the State and the City—by faithful adherence to the simplest provision of the elements of sound housing. They are in some respects awkward; but they are so much better than these of any competitor that there are long waiting lists for tenancy. This list and a firm policy is the tenant and collection regulator. The best assurance that more investors will

emulate the Brooklyn Garden Apartments and improve on design or reduce rents will be found in the early and steady achievement of this company as a business.

The success of this company demonstrates that the building of model tenements under the state housing law can be a safe, conservative business, as well as a community benefit. Its new houses are the only development under this law in which old and unfit houses have been torn down. Though this added to the site cost, the experience indicates that these units will earn enough to pay 6% on their cost. It is a pleasure to note that former Governor Smith is now organizing a project for the lower East Side which will also destroy a block of old tenements.

It is the aim of the housing law that outworn habitations be replaced with modern houses at low cost. The writer believes that the tax limitation subsidy, which is sufficient to liquidate 90% of the entire investment in about 20 years, was given solely for the purpose of inducing direct replacement of slums by sound but in no sense lavish housing. Indulgence in any excess over minimum standards raises cost and inevitably places the new rooms beyond the reach of the persons displaced, while reducing the number of new abodes that can be supplied. It also at least threatens the dividend and invites or compels extra charges to supplement the fixed rent.

WALTER KRUESI
Brooklyn

INTERESTING FACTS ABOUT MODEL HOUSES AND THEIR TENANTS

IN CINCINNATI

The industrial conditions of 1930 have naturally affected the activities of the Cincinnati Model Homes Company, though not to the extent of actual harm. The wage earner with his income cut off or curtailed was compelled to economize on housing which resulted in an unhealthy shrinkage in the demand for housing. Giving up independent housekeeping and sharing living quarters with relatives or friends has become a practise among various industrial classes—with the inevitable outcome that all classes of dwelling property have suffered.

The groups of buildings affected by these conditions were with only one exception groups occupied by white people. On one post-war

group the Company lost in vacancies and by defaults 29% of its annual gross income. Another white group of pre-war construction that has always enjoyed full occupancy on account of the low rentals and its proximity to industrial establishments lost 11.5% of its annual income in vacancies and defaults. The only colored group that made a poor showing was the Carr Street unit—consisting of 10 2- and 3-room apartments and a store—entirely due to its location. The Negro that seeks our accommodations does not want to live in the West End “bottoms”.

Contrasting strikingly with this epidemic of vacancies in our white groups, we have been experiencing an unabated brisk demand for accommodations in our suburban colored groups. We are still the recipients of letters, telephone and personal calls from employers in behalf of their colored employees. And every time we have a vacancy we have a problem on hand: who shall be the privileged one?

The contrast in the housing situation of both races was vividly demonstrated last summer, when we turned over to a Negro tenantry 3 groups occupied by whites with a total of 75 3- and 4-room apartments. There was a rush for them and within 2 days 95% of the accommodations were taken.

But for the uncertainty of future prices in the construction line, conditions seem to favor our re-entry on a construction programme—for Negroes of course. With our indebtedness off the slate, from now on we shall be accumulating annually in cash around \$25,000—representing depreciation charges and surpluses. We shall be confronted with the problem what to do with the money. It is not likely that our Board will favor active investment in other fields than industrial housing—a service to the community that has become a tradition with us.

Houses—our builder assures us—can now be built at 25% less than in 1929, which means a possibility of renting at \$7 or \$7.50 a room per month—a rather moderate rate for the present; and, perhaps, for the future.

The present depression is not a hindrance. We shall benefit from the present keen competition among contractors, the eagerness of labor for employment and the anxiety of the material man to see cash. It is well to remember that our major activities were entered upon in 1914—a year with free soup kitchens open in all large cities of this country.

LOSSES FROM VACANCIES

Our total rental income for 1930 amounted to \$105,585.97—or close to \$2,000 less than in 1929. The losses in vacancies and by defaults were

\$6,472.92 and represent 5.7% of the gross rental income, as against 2.6% in 1929. Over \$2,000 was lost in the above mentioned 3 groups in the interim between the white and colored occupancy. 40% of the white tenants in these 3 groups took advantage of the change and carried off half or the whole of the last month's rent, amounting to \$323.80. Some of them argued that they were put to the inconvenience and expense through no default of theirs and, therefore were entitled to some recompense in free rental. In view of the industrial conditions and, perhaps, because of some merit in the argument, we did not contest that claim.

Examining our losses along racial lines, we find the losses in vacancies

Slightly over	1 %	in the colored groups
Almost.....	13 %	in the white groups
Losses by default.....	2.2%	in the colored groups
“ “ “	1.8%	in the white groups

If we exclude losses by default in the Braxton Campbell Court groups—the group turned over to Negroes—which occurred under peculiar circumstances, the default among the white groups was 1% of their annual rentals, or 5 times greater than among the Negro groups.

While this favorable showing is due in great measure to the type of Negro we have been housing, in justice to the white man we must not overlook his greater mobility. In our experience we find 3 times as many whites move as Negroes. Proportionately, 3 times as many white tenants are exposed to the temptation to move without paying the last installment of rent. We wonder if the turn-over were as great among Negroes as among whites, whether the figures would favor the Negro.

This is further reflected in the delinquent list as of December 31st last. There the Negro appears with 1.7% of his annual rentals delinquent, while the white man appears with only 0.8%.

The net results of the different groups varies from 1.1% to 12%. Eight (8) groups netted us over 6%; and 8 below the 6% level. All groups together netted a fraction over 5% on the original investment.

MAINTENANCE COSTS

Our direct expenses for all groups were \$57,389.55. Excluding depreciation which is a fixed book charge, taxes (over which we have no control, insurance and other items that do not enter into maintenance proper) we find the cost of upkeep, including water, in 1930 was \$14.90 per room, as against \$14.91 in 1929; \$15.16 in 1928; \$16.73 in 1927; \$11.79 in 1926; and \$11.50 in 1925.

The maintenance cost would have been less, but the changes of tenantry in the above-mentioned groups entailed quite an expenditure on interior renovating. Again, in 1930, 40% of our buildings received 2 coats of paint, as against 9% of our holdings in 1929.

So far there is no standard yard stick that can be applied to our cost of maintenance in order to determine whether our cost of operation is economic or extravagant. Our aim, though, must be to maintain a good standard of upkeep. We are constantly bearing in mind that our problem is as much a human one as it is a commercial one—perhaps, more so. The elevating influence of a high standard of upkeep on the human side of the problem cannot be over-estimated. Where respectability ends, slum conditions begin. Undoubtedly our own standards have risen with years of experience and service. And it is rather a hopeful sign that we have not grown stale and are marching with the times.

HOW OUR INCOME IS SPENT

Our gross income was spent in the following ratios:

3.00%	for maintenance, including water
2.35%	“ local and state taxes
2.25%	“ depreciation
1.50%	“ overhead
0.9 %	“ loss in vacancies and default
0.6 %	“ income tax
0.5 %	“ hotel operations
4.5 %	“ dividend and surplus
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TOTAL	15.60% on the entire investment

THE SHIFTING TENANT

During 1930, 75 families moved—54 white, or 38% of their number; and 21 colored, or 7% of their number—for the following reasons:

	White	Colored
Moved to stay with relative or friends.....	14	2
Asked by us to move.....	3	5
Left city	6	2
Bought houses.....	5	3
Moved to better quarters.....	6	1
“ without giving notice.....	6
“ on account death or sickness.....	3	1
“ on account inability to pay rent.....	3	1
“ closer to work.....	2	1
“ to cheaper quarters.....	2
“ on account of colored neighborhood.....	2
“ could not get along with neighbors.....	1	1
“ Miscellaneous causes.....	1	4
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TOTAL.....	54	21

Sixteen (16) moved to stay with relatives or friends. This is the largest number in that classification in our experience. Adding to this

class those who moved to cheaper quarters and those who could not keep up with the rent, we have a total of 22 cases of moving—or almost 30% of the total—that are traceable to the present industrial conditions.

Under the caption “moved to better quarters” there appear 7 cases—6 white and 1 colored. Within the last 6 months cases came to our notice where apartments with more convenience than ours are offered at a rate equal to ours, or slightly higher. During January we lost 2 tenants due to that fact. In one instance the tenant moved to a 4-room apartment with bath, garage and heat furnished for \$37.50 per month; whereas he had to pay us for the same accommodations *without heat* \$38. In the other case, the tenant found a 4-room apartment with furnace and garage for \$32 per month. He had been occupying with us a 4-room apartment at a rental of \$27 without garage or furnace. His gas bill for heating in the winter ran as high as \$10 and over.

These cases may be of a temporary nature and are confined to the small landlord, but they suggest the idea that our older buildings may soon become obsolete without these more modern conveniences. We are going to look into the possibility of making them more up to date.

OCCUPATIONS AND ECONOMIC STATUS

Last summer we embarked upon a bit of statistical work to determine the economic status of the Negro. Heretofore our knowledge of his earnings, insurance protection, loss of time through unemployment, sickness, etc. were speculative at the best. We ventured to take a census—not without some misgiving, for fear of offending him or being misunderstood. After preparing the ground with a letter, we sent out a census taker—a man from their midst—and with the exception of one case we succeeded in getting information that throws some light on the subject.

We confined our inquiry to the Washington Terrace, Annex, Taft Lane and Kerper groups—the older groups—where the community spirit seems more prevailing and where cooperation would be more likely.

While at the present writing we are not able to present the data in a shape that would withstand critical examination, the information that follows may be of some interest even in its raw state.

We found the total population in these 4 major groups to be 626 men, women and children of all ages, averaging $3\frac{1}{3}$ persons per family—a total of 188 families.

Considering only heads of families and their occupations and earnings, we find them to fall in the following divisions:

30 chauffeurs average earnings.....	\$25.27	per wk.
22 laborers average earnings.....	22.32	" "
19 porters average earnings.....	21.05	" "
13 domestic service average earnings.....	20.50	" "
6 janitors average earnings.....	24.17	" "
5 cooks average earnings.....	30.60	" "
4 postoffice service average earnings.....	32.62	" "
4 clergymen average earnings.....	20.75	" "
4 moulders average earnings.....	28.50	" "
3 mechanics average earnings.....	27.33	" "
3 hodecarriers and bricklayers average earnings	47.00	" "
3 gardeners average earnings.....	18.33	" "
3 truck drivers average earnings.....	22.30	" "
23 miscellaneous average earnings.....	23.74	" "

TOTAL.... 142

28 widows, 8 deserted wives, the retired and pensioned make up the balance of families.

AVERAGE EARNINGS

The average wage of the heads of these 142 families was \$24.17 per week.

In 62 cases, or 41% of families—excluding widows and deserted wives—the income of the family is supplemented by the earning of the wives, who average \$10 per week. In 30 families, or 16%, we find adult children working whose average wage is \$12 per week. Of the 28 widows, 12 rely on their own earnings for a living, which average \$11.70 per week; 13 widows have their income supplemented by those of their children; 2 are wholly supported by children, and 1 was ailing with heart trouble and lived on insurance money left by her husband. In the 8 desertion cases, 5 have minor children to support; and the average wage of all was \$12.40 per week. Two had their kinsfolk stay with them.

UNEMPLOYMENT

With reference to unemployment we properly confined our question to the year 1929. In 63 families, or 33.5% of the total, 66 individuals lost through unemployment a total of 883½ weeks—representing a loss in wages of \$16,969, or \$269.32 per family, or \$5.30 per week per family affected. We were careful not to include in the above numbers and amounts, losses claimed by semi-invalids and semi-retired. At the time of the census—the latter part of April—only 15 heads of families, or 8% of the total number, were wholly or partly unemployed.

HEALTH AND INSURANCE

On the question of health we also confined ourselves to the year 1929. From the answers received we found that in 113 families, or 60% of the total, 59 men were ill during 1929 and lost 362 weeks in time and \$4,643 in wages; 78 women were ill a total of 707 weeks. The loss in wages of those who work amounted to \$841. A total sickness bill of economic value of \$5,484.

In the matter of insurance protection we inadvertently confined ourselves to the heads of the family, omitting the rest of the household. Nevertheless the data available enables us to get an inside view of the situation. The following amounts are carried with insurance companies:

94	heads of families, or	50 %	carry from \$ 40 to \$ 500
52	" " " "	27.5 %	" " 500 " 1000
17	" " " "	9 %	" " 1000 " 2000
9	" " " "	4.8 %	" " 2000 " 3000
2	" " " "	1 %	" " 3000 " 4000
1	" " " "	0.5 %	" " 4500 " "
5	" " " "	3 %	" " no life insurance but have sick benefit insurance.
8	" " " "	4.2 %	" " no protection at all.
188		100 %	

The grand total of insurance carried is \$136,726 and averages \$781.29 per policy; 46 heads of families carry additional insurance with lodges, totaling \$11,870. The combined insurance on 175 insured averages \$849 per policy. 111 heads carry sick benefit insurance with companies, averaging \$10.50 per week; 38 of them carry additional sick benefits with lodges with an average of \$3.93 per week. Combining the two sources, the average sick benefit is \$11.84 per week. 77 heads, or 41% carry no sick benefits.

Not having any basis of comparing these data with those of other similar groups in other localities, or among the white wage earner, we present this picture without comment for what it is worth.

HARRIS GINBERG

Secy-Treasurer, Cincinnati Model Homes Company

HOUSING IN THE NEW YORK REGIONAL SURVEY

The sixth* of the eight volumes of the New York Regional Survey is the last to be issued; and it is the one which has most to say to those

**Buildings: Their Uses And The Spaces About Them. Regional Survey—Volume VI. Three Monographs by Thomas Adams; Thomas Adams and Wayne D. Heydecker; and Edward M. Bassett assisted by Harold M. Lewis and Lawrence M. Orton. With appendices on Economic Production of Workingmen's Homes by Grosvenor Atterbury; Standardized Construction of Dwellings by W. H. Ham; and Zoning Cases in the United States by Edward M. Bassett and Frank B. Williams.*

who are directly interested in housing. It comprises three monographs: one on the Character, Bulk and Surroundings of Buildings; one on Housing Conditions in the New York Region; and one on the Control of Building Heights, Densities and Uses by Zoning.

The first is by Thomas Adams, General Director of the Plan and Survey, and represents the author at his best on a subject of which he is an acknowledged master. The third is by Edward M. Bassett; and here also we have the best thought of one who is a recognized authority on zoning, heights of buildings, eminent domain and related subjects.

The central monograph, from which we might naturally expect the most, suffers by comparison with the other two; and also, perhaps, because the "constructive suggestions for a housing policy," which we are most eagerly anticipating are reserved for the second volume of the Regional Plan—not yet published. Announcement in the New York press warranted the assumption that these constructive suggestions—a concrete programme for housing reform—were to be found in this volume. And although the foreword to the volume itself corrects this notion, the disappointment remains, especially as the title of the monograph and some of the sub-titles are in harmony with the press announcement rather than with the foreword's disclaimer.

In fact, there are here some very valuable constructive suggestions. It is merely that they do not, as the other monographs, march with assured step to a consistent and integrated programme. The most important of those that do appear here is that the primary need in connection with housing is adequate space about buildings for light, air and recreation. This thought is central of course to the entire volume. Bad housing in the author's view is the result of social error based on unsound economics. Mr. Adams insists that a minimum standard for purposes of health—not an ideal but an italicized *minimum*—demands that all rooms used for habitation should have direct access to the open air, that the buildings should therefore not be more than two rooms deep, and that every window should have an angle of light of not less than 45 degrees.

This monograph, we must remember, deals with housing conditions in the New York Region. It is not a discussion of what might be done in Utopia. After recapitulating the familiar social considerations in favor of light and direct ventilation in every room used for habitation, the author proceeds to discuss the same question from the narrow economic point of view, the making of profit from the use of land. Without mincing words Mr. Adams denounces the fallacy of

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over-crowding houses, especially dwellings, on land. He admits the greater difficulty of showing the error in the case of business buildings, although he evidently considers it unsound economics even for business centers. He remarks that it is obvious that where excessive densities already prevail it might be impracticable to reduce them to a proper standard without financial hardship to owners or serious cost to the community. With this, however, we may associate another of his remarks that "in general there is too much sympathy on the part of governments toward the maintenance of property values, even when these depend on profits derived from unhealthy and unsafe conditions of housing." That Mr. Adams is thinking not merely of governments but of the public is evident from his expressed desire to create in modern democracies a fiery discontent with the evil results of bad housing.

Another constructive suggestion is that in the large sections of Richmond and Queens Boroughs, which are not yet included in the official street map and are not zoned, the opportunity should be seized to insist on the provision of road access and proper sanitary arrangements before lots are built upon. The first step in slum prevention in these outlying areas would seem to be to put all of the city in the fire zone. The present Report implies, rather than directly advocates this, although it dwells repeatedly upon the conflagration hazard in Queens. The author asserts that more is needed than the extension of the fire limits. Lower density of population, open space around buildings, separation of dwellings from buildings used for business and manufacturing, and stringent regulation of building construction are all emphasized. The ideal is the density now allowed in districts reserved for small dwellings and the requirement of fire proof material for construction.

EDWARD T. DEVINE
New York City

A THOROUGHFARE PLAN FOR BOSTON*

This is one of the most thorough and complete thoroughfare studies produced for any American city. Not the least of its virtues is the method of presentation, good printing, a generous use of photographs, airviews, and well prepared maps and illustrations. It is the culmination of three years' study of one of the most difficult street traffic problems in American cities.

* *A Thoroughfare Plan for Boston, prepared for the City Planning Board by Robert Whitten, Consultant. 236 pp. 1930. The City Planning Board, 30 City Hall, Boston.*

Boston is an old American city, very compactly built, and with numerous historical traditions built up around many of the buildings that line its thoroughfares. Obviously, therefore, it could not reasonably undertake a programme of street widening of the mode which has been found so convenient and beneficial in the more openly-built cities of the Middle West or Pacific Coast. Previous to 1900 it is estimated that Boston had spent more than \$40,000,000 on street widening—principally in the downtown district. No doubt it has spent a larger sum since that date but its traffic problem still continues to grow.

The present plan contemplates a system of high-speed, express (continuous flow) thoroughfares and more than 50 lesser street opening and widening projects designed to improve local circulation. The express highways are generally planned with a minimum width of 140 feet and the lesser projects 80 and 100 feet in width. The fact that the greater widths of the express highways can be secured at all is somewhat surprising, but is, of course, due to the advantages of a broken topography,—a fact surprisingly unappreciated and little used in most cities. To a profound student of modern city planning one of the most gratifying aspects of the express highway plan for Boston is its attempt to relieve the traffic problem of the central more congested areas of the city, rather than merely contemplating an endless spread of the city by building “superhighways” capable of being indefinitely extended out to the edge of things.

Another important part of the Report is the section dealing with the construction programme extending over a period of from 15 to 25 years, which is divided into 4 sub-periods of from 4 to 6 years each. The cost of many of the projects has been estimated; the amount of the first period being \$28,557,000 and for the second \$18,690,000, a total of \$47,248,000 inclusive of property damage, surfacing, and permanent structures.

As a constructive study of modern street traffic and planning problems this Report is highly recommended.

HARLAND BARTHOLOMEW
St. Louis

“THE LAW OF ZONING” *

One of the most important cases with regard to zoning in this country is *Village of Euclid v. Ambler Realty Co.*, in which for the first time the Supreme Court of the United States considered the validity of zoning and sustained it, under the national constitution. The de-

* *The Law of Zoning* by James Metzenbaum, L.L.B., of the Cleveland Bar. Baker, Voorhis and Co., New York. 569 pp., Price \$7.50.

cision was rendered in 1926. The first municipal regulation which fully deserves the name of zoning was passed in New York City in 1916. Before 1926 zoning had fought its initial battles and been victorious in the highest courts of many states; but in others its future was still in doubt. The Euclid Village case, although not binding in these states, was of such commanding importance that it brought them all into line; in some cases—as in New Jersey—by the passage and favorable construction of a state constitutional amendment.

Mr. Metzenbaum was attorney for the plaintiff in the Euclid Village case, and with the assistance of many civic associations and public spirited individuals rallying to him, won a notable victory. The book he has written contains a long account of the conduct of that case. For this it is chiefly notable. In addition, it is a treatise on the law of zoning, containing much—too much, perhaps—of interest to the curious, in addition to that which is of value to the student and the practitioner.

FRANK B. WILLIAMS
New York City

“THE AXIS OF CHICAGO”

Nowhere has Daniel Burnham's insistence upon “big plans that appeal to the imagination of men” so vindicated itself as in Chicago. Much of Burnham's Grand Plan for that city has been accomplished in less than a quarter century. Now comes a final test of the rightness of that plan in the proposal for a definite fixing of the east and west axis of the central city. The 1929 report by Edward H. Bennett and Harry T. Frost in analysis of Congress Street and Monroe Street as alternative axial avenues is a clear and convincing presentation of facts appearing to bear out the soundness of Burnham's early recommendations.

The Burnham plan indicated Congress Street as the ultimate east and west axial way from the lake front and Michigan Avenue to the west city limits. Several important plan projects have since been constructed with the Congress Street improvement in view. More recently, alternative proposals have been made which would appear from the Bennett report to be far less commendable.

Mr. Bennett and his associates have modified the original scheme in adaption to present day traffic conditions. Their proposals are well

presented in a series of photographs, maps, and sketches, contained in the Report.*

Two general principles illustrated by these studies are particularly worthy of comment. One is the avoidance if possible of double-decked streets, especially in residential areas. Damage to property incidental to such proposals is usually underestimated. Relief occasioned by extensive use of the double-decked street is questionable. It is likely to be merely a means of, or stimulation to, greater concentration of building. The United States is too big and its probable ultimate population too small to make it necessary for its people to perform their daily functions underground like moles.

The other principle is that of skirting rather than piercing the city center by great feeder streets or arterial highways. The proposed Congress Street improvement borders but does not enter the Chicago loop district. Monroe Street, as one of the suggested alternatives, passes directly through the loop with certain great confusion of traffic.

The day may come when all free moving vehicles, except those designed for mass transportation, will be excluded from such areas as the Chicago loop district during business and shopping hours. In such event Mr. Bennett's championing of Congress Street as the east and west axis of Chicago will be doubly appreciated.

RUSSELL VAN NEST BLACK
Philadelphia

* *The Axis of Chicago* by Edward H. Bennett and Harry T. Frost. 1929. 43 pp., Bennett, Parsons and Frost, 80 E. Jackson Boulevard, Chicago.